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Devoted to the Science, Art, Philosophy, and Literature of Education

To Our Contributors:

We regret to announce that all the issues of EDUCATION magazine for the current year, 1960-61, have been completely filled. Accordingly, all manuscripts submitted in the next few months, except those dealing with critical issues, will have to be considered for the year 1961-62.

The following criteria will guide you in the selection of topics and in the development of manuscripts:

1. Concern yourself with timely subjects, bearing on the curriculum, instructional methods and techniques, and educational problems and trends.

2. Direct your article to teachers, supervisors, curriculum directors, and administrators—and always keep your audience foremost in mind.

3. Prepare the article around a point of human interest, such as a classroom experience or a supervisory situation, and adhere to one point of view throughout the article.

4. Limit the length of your article to approximately 1500 words.

5. Restrict the length of paragraphs to five or six typewritten lines.

6. Insert brief center headings in the article to show the organization of content.

Perhaps, in summary, you will find it helpful to follow the admonitions of Joel Chandler Harris who wrote as follows in his "Advice to Writers for the Daily Press":

When you've got a thing to say,
Say it! Don't take half a day.
When your tale's got little in it,
Crowd the whole thing in a minute!
Life is short—a fleeting vapor—
Don't fill the whole blamed paper
With a tale which, at a pinch,
Could be cornered in an inch!
Boil her down until she simmers,
Polish her until she glimmers.

The Editors

Schools and Community Work Together

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For at least ten years, a group of parents in Daytona Beach has been interested in the education of superior and gifted children. This interest was promoted in the main by the high academic achievement of boys and girls in these families. A nucleus of parents met together informally over the years and studied the literature available.

In August, 1957, before Sputnik, the Board of Public Instruction acted on a joint recommendation of the parent group, the Continuing Council on Education (a lay advisory group), and A. F. Edmunds, Director of Education, Volusia County Public Schools. Under provisions of the Florida State Education program, the board established the initial position of Counselor for Education of Gifted Children.

Where To Start

The first question was, "With how many children will we be dealing?" Inasmuch as objective information was limited and, in many instances, the general concern did not pinpoint the needs of the gifted child, a program of information on identification was pursued. The counselor met with the various faculty groups to discuss characteristics of gifted children, methods of identification, and different types of programs.

One of the major problems of identification encountered with these groups was—and continues to be—the confusion between academic superiority and native ability. One evidence of this confusion was the large number of referrals of children whose "grades" and tested achievement were high, but whose IQ's were not above 120. It was found upon closer study, that these children did not show the creativity which is a mark of the truly gifted. Only a small number of boys and girls were referred whose intellectual ability was in the classification of gifted, i.e., about 130 IQ, but whose academic achievement was mediocre. As these discussions continued, criteria were developed and a screening program was instituted.

It was felt, because of the geographic layout of the county, that a pilot project involving thirteen schools, all within a nine-mile radius, would be best. Teachers of grades three through seven were asked to recommend children on the basis of observation and records. This initial request resulted in some five hundred and fifty referrals. After screening,

one hundred and fifty children were invited to take part in the enrichment program. This number represented about 3 per cent of the enrollment for these schools in grades three to seven.

Criteria for Selection

The problem of selection criteria for gifted children is a knotty one. The literature is somewhat confusing on this point. One author may classify the gifted as the top 3 per cent; another says that those with IQ's of 145 and above are gifted; still another may use cutoff points anywhere above 115 IQ. Reference to specific talents seems to be the criterion.

After much consideration, the main criteria used in Volusia County were the following:

1. Enrollment in grades three to seven
2. Intelligence Quotient of 130 or above
3. Over-all physical, social, and emotional maturity
4. Parental approval
5. Rating by present and past teachers as likely to do well in a selected-group situation
6. Good reasoning ability
7. Wide interests

Screening

It was impossible to obtain results of a comparable nature on the children referred, because there was no uniform testing program in the county school system. Some schools had strong testing programs; some had none. It was decided, because of this difficulty, that all children should be screened by the same instruments.

In order to control the testing situation and to secure information as valid as possible, each child was given the Kuhlmann-Anderson Intelligence Test and the Science Research Associates Primary Mental Abilities Test by the same examiners. The publishers of the Kuhlmann-Anderson test recommended that we use the form of the test which was two levels above the age-grade placement of the child. This procedure proved to be sound, in that frequently the individual reached the ceiling of the test even at this advanced level, thereby calling for further testing in the Kuhlmann-Anderson series.

The results of the two batteries together were found to be a good over-all measure. Only in the case of wide differences was individual evaluation indicated. This combination of screening devices was found to be valuable in locating strengths and weaknesses in many of the children.

The Enrichment Center

Inasmuch as the schools involved were in close proximity, and inasmuch as personnel, supplementary materials, and equipment were necessarily limited, it was decided that traveling to the schools would not be economical, in terms of time or programing.

About this time, the Board of Public Instruction obtained a school site, on which was located a paint warehouse. It was found that this building could be converted for use as an Instructional Enrichment Center. The board allocated a budget for this purpose.

At this point, the development of the Center became a truly co-operative project. The Volusia County Association for the Gifted, organized by the original

parent group in January, 1958, assisted materially in the contribution of time and labor to supplement the funds provided by the board. The association organized scrubbing parties, sewing bees, painting sessions, and woodworking projects. The renovation was completed and the program was put into operation on February 2, 1959.

Scheduling and Transportation

The distribution of the one hundred and fifty children in terms of geographic location and grade placement made the final scheduling relatively simple. In view of the pupil-teacher ratio, it was decided that each child should participate in the enrichment program one day each week. Since there were no lunchroom facilities at the center, the most satisfactory arrangement was to plan for a split schedule—one morning session and one afternoon session on two different days.

In the initial planning of the program, the Board of Public Instruction indicated that it would not be able to provide school bus transportation. Again, parents co-operated in forming car pools to carry the children from their home schools to the center. It was the opinion of some people that this arrangement would not work. To the contrary, this procedure proved to be more than satisfactory.

Curriculum

In the initial phases of planning in August, 1958, the Counselor for Gifted Child Education, the two teachers for the Center, and the Co-ordinator of the Exceptional Child Program, met with the curriculum committee of the association. From this preliminary meeting a general outline was prepared, which later was incorporated in the description of the entire program in a mimeographed pamphlet.

The curriculum was designed to center about a central theme. There was no good history of Volusia County written with children in mind. Therefore, it was decided that this would be the central theme—the ultimate goal being a children's history of the county, written by and for the children. The original outline was specific in the areas of subject matter, but it must be remembered that, even though specific, it was considered tentative.

Planning a curriculum for the various groups from the thirteen school centers presented several problem areas. Recognizing the fact that many different activities were being carried on in each school, the enrichment curriculum to be planned would have to avoid repetition of these activities. Therefore, planning differed from the usual vertical or horizonal types of enrichment.

Research has indicated that among gifted children there are those with special needs, such as the development of research skills and improved study habits. These techniques were incorporated into the curriculum and taught directly in many instances.

It had been anticipated that a considerable amount of small-group activity would be carried out in the program. First attempts resulted in chaos. The children had little idea of self-direction and co-operation. It was found that the children had to be guided into this type of activity. By the end of a ten-week period, much growth in this area was seen and a number of projects were completed using this method.

Early in the program the staff met with frustration resulting from student diversity of interests—diversity so broad as to result in no practical grouping possibilities. It was found also that the time and energy of two teacher-consultants could not be stretched far enough to begin to meet individual needs. As a result, the course of study was restructured to include some "required subjects" and a few "electives."

As an example, thirty-three children indicated interest in learning to use the typewriter, while two wished to study comparative religion. Typing was presented, but only to a limited extent because of a shortage of equipment.

Chemistry was high on the list of interests, but no laboratory facilities were available. Many of those children who had had some experience with chemistry sets at home were almost totally unable to present information in a meaningful way to the group. Hence, it was decided to develop several broad units in science.

The opening of the nearby Daytona International Speedway provided an opportunity to present material on sound. Community resources were called upon; staff members of the Radio and Electronics Section of the Vocational-Technical Division of the Daytona Beach Junior College (a division of the county schools), as well as the owner of a local electronics store, came to the Center and gave technical demonstrations. Films were used to illustrate sound production. Musical instruments were demonstrated by a musicologist from the Adult-Education Division of the school system.

The unit on sound continued for a week and a half. At the end of this time, the children were required to "feed back" the information in forms of their own choosing. These reports were varied —chart drawings were made, models built, stories written, reports put on tape. Much use was made of the reference library.

As an outgrowth of this unit, interest in short-wave radio, as a means of communication, has developed.

A unit on soil failed to arouse a response, while archaeology became a fascinating study. Many children carried this interest and enthusiasm back to their regular classes.

One of the "required subjects" was conversational Spanish. In conjunction with this subject, another community resource provided instruction in Spanish dance, including description of the development of steps as well as instruction in performance.

Current events provided opportunities for detailed map study, which was not always possible in other classroom situations. Theories of map projection produced lively discussion and active research. Plans for the future include the study of geographic theory and "lost worlds," providing opportunities for the study and testing of theories and the learning of additional research techniques.

As a learning device, the children set up the library. Many comments from the children concerning the relatively small stock of books at the Center indicated their appreciation for having good reference materials readily available. The Center has been most fortunate in being able to obtain by gift, loan, and purchase a good beginning for a reference library.

An interesting side result of the program was the development of friendships "across school lines." A boy with a particular interest, isolated in his

particular school, found a friend in a boy in a similar situation from another school. Friendships also crossed economic lines. One was the child of well-to-do parents; the other was from very limited circumstances.

Summary

It cannot be emphasized too strongly that community co-operation is essential to the success of a program such as the one described in this paper. The concern of parents for the educational welfare of their children is the primary driving force in making such an effort possible.

Realizing that the program which has been described was planned for a specific community with specific objectives in mind, the general principles which were followed are applicable to many situations. The final shaping of any program depends upon the local situation. Factors to be considered include the philosophy of education of the local school system; the financial resources; the feeling toward "special programs"; the distribution of schools within the district; and the attitude of parents.

The original structuring of the course of study was found to give direction and meaning to revisions that were made during the operation of the program. One should not plunge headlong into such an effort without a plan, nor should the plan be so specific and constrictive that revisions are impossible. Continuing evaluation is mandatory, not only for local use, but also as a guide to others. This would mean that reports should be made available for publication. The value of the account would be increased by including the failure of plans as well as those which were successful.

In spite of a variety of difficulties, some still to be worked out, the program in Daytona Beach has been most rewarding. This has been due not only to the efforts of the staff, but also, in large part, to the fact that the community was ready and waiting for this opportunity for their children.

REFERENCES

1. Abraham, Willard. *Common Sense about Gifted Children* (New York: Harper and Brothers, 1958).
2. Cutts, Norma E., and Moseley, Nicholas. *Bright Children: A Guide for Parents* (New York: G. P. Putnam's Sons, 1953).
3. Cutts, Norma E., and Moseley, Nicholas. *Teaching the Bright and Gifted* (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1957).
4. DeHaan, Robert F., and Havighurst, Robert J. *Educating Gifted Children* (Chicago: The University of Chicago Press, 1957).
5. Educational Policies Commission. *Education of the Gifted* (Washington, D. C.: National Education Association, 1950).
6. Eves, B. Miller, and Eherts, Arlene S. *A Proposal for a Center for Instructional Enrichment in Volusia County, Second Revision* (Mimeographed), Board of Public Instruction, Volusia County, Florida.
7. National Society for the Study of Education. *The Education of Exceptional Children*, Forty-ninth Yearbook, Part II (Chicago: University of Chicago Press [Distributor], 1950).
8. Passow, A. H., and Others. *Planning for Talented Youth: Considerations for Public Schools.* (New York: Bureau of Publications, Teachers College, Columbia University, 1955).
9. *The Role of the Parent in the Education and Training of the Mentally Superior Child*, Kent State University Bulletin (June, 1957).
10. Witty, Paul A. (ed.). *The Gifted Child* (Boston: D. C. Heath, 1951).
11. Worcester, D. A. *The Education of Children of Above-Average Mentality* (Lincoln, Nebr.: University of Nebraska Press, 1956).

Cluster Grouping

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As the 5B pupils divided into committees for their research on explorers, John and his group went to the "Listening and Viewing Center." Discovery and exploration of America would come alive through the use of audio-visual aids by the gifted "cluster group."

Miss Jones had been searching for new and challenging material to supplement the class unit, "Colonization and Settlement of a New Nation." The audio-visual specialist suggested seven sound filmstrips which would be appropriate for this unit. The filmstrips portrayed the issues which arose in the mother country preceding colonization.

Miss Jones wondered what avenues of creative expression would be stimulated by the use of these filmstrips. Mentally, she checked the interests of her group: John is keenly interested in maps, diagrams, and charts; Mary is clever at writing characterizations; and Mike—in what is he interested? Perhaps his constant doodling could be channeled into some illustrations for Mary's characterizations—he does show such a good sense of humor in that doodling! Joan and Dave remain—what interests do they have? Perhaps the use of the tape recorder would appeal to them in working out a way of reporting to the class.

What is a cluster group? A cluster group is a small group of two to ten pupils. Clustering a group of gifted pupils in a classroom with pupils from average to superior ability is a regular practice in the Los Angeles City Elementary Schools. This practice narrows the range of abilities of pupils and provides a group of gifted pupils who can work together.

The school counselor assists in the process of clustering by identifying giftedness through individual psychological studies. As pupils of similar abilities are located, administrators place them in the same classroom to be with others like themselves—others who have similar interests and capabilities of assimilating more complex learnings.

Listening Center

Clustering of gifted pupils in a single classroom facilitates the provision of materials and equipment which help to meet special needs of pupils. The listening center consists of either a transcription machine and earphones or a tape recorder and earphones. This equipment is used to enrich the regular classroom program for gifted pupils through the use of records, transcriptions, or tape recordings to provide learning experiences of a complex nature or new experiences not usually provided in the regular program. The gifted pupils use

these materials independently in a "center" (which may be in a corner of the classroom), while the teacher is working with the remainder of the class.

Viewing Center

The viewing center contains filmstrips, a filmstrip machine, and a small screen. When gifted pupils have completed their regular work, they may use the viewing center for enrichment purposes.

There are thirty-seven classrooms in the Los Angeles Elementary Schools which have been furnished with special equipment and materials for listening and viewing centers. The schools are purchasing additional materials.

Ideas for the Centers

Primary teachers make tape recordings of more difficult and challenging content to go with regular study prints; gifted pupils listen to these recordings in the listening center as they look at the study prints.

Arithmetic practice, simple language lessons, and guides for science observation or experimentation are other ideas which teachers have used in preparing tapes.

At the intermediate level, gifted pupils write and record scripts for the regular filmstrips which come to the classroom. The entire class listens to the recorded script and views the filmstrip simultaneously. This activity involves considerable research and develops skill in writing and speaking.

Upper elementary teachers utilize the tape recorder for recording appropriate educational radio programs. Taping the radio programs permits their use in the listening center at a later time, when the gifted pupils have a particular interest or need.

Creative Expression

Listening and viewing centers also provide further opportunities for creative expression. In one school, a pupil prepares weekly news summaries which are broadcast to the entire school. Gifted pupils record original stories on tape for use in the listening center by cluster groups of gifted pupils in primary grades. Pupils prepare and record talks which accompany posters to other classrooms at times of special drives or other school activities. Thus, enrichment is provided for gifted pupils without interrupting their regular work.

Gifted pupils also record interviews with resource people, authors, painters, scientists, or civic leaders for playback to the entire class.

Kits of Learning Materials

Another idea which is adaptable to small-group work is a "kit" for extending the learning experiences of gifted pupils. These kits include filmstrips, a study guide, study prints, booklets, manipulative materials, and other related instructional materials. Some bibliographies are available to accompany the kits. The development of bibliographies, as well as additional kits, depends upon provision of additional funds. Present kit titles include "Sound," "Hawaii," and "South America."

The Basic Program

Cluster grouping is only one way of providing for gifted pupils in the Los

Angeles City Schools. It was selected for discussion because it represents a new emphasis in elementary schools. Some of the following remarks, which are relative to other provisions for gifted pupils in the Los Angeles Schools, have been adapted from *Education of the Intellectually Gifted*.[1]

The basic point of view of the Los Angeles City Schools is that every pupil should be helped to make the most of his potentialities. Intellectually gifted pupils, however, differ from the majority of their classmates in their ability to master abstract concepts and in their speed of comprehension. These differences emphasize the importance of individualized instruction in order to challenge the interests and abilities of the "gifted."

A variety of approaches has been utilized in meeting the needs of gifted pupils in many different schools throughout the city. Through these varied approaches answers are being found to the problem of how to meet the needs of gifted pupils. We in Los Angeles believe that there is no single best way to educate the gifted; the general approach is one of flexibility and willingness to plan for and to utilize the methods that seem best fitted to given situations.

All pupils may have talents in areas other than the academic field, such as art, music, social relations, leadership, mechanical ability, and athletic skills. Pupils may be outstanding in some areas and average or below average in others. Many intellectually gifted pupils also have special talents. Identifying pupils with special abilities and talents and making adequate educational provisions for them are important factors in the program for gifted pupils in the Los Angeles City Schools.

Intellectually gifted children are defined, in Los Angeles, as those who are in approximately the top 2 per cent of the total school population, as measured by intelligence tests. Within this classification, two groups are considered: First, the "gifted" are all pupils with intelligence quotients above 130. Second, the "highly gifted" are those pupils with intelligence quotients above 160.

Last year in one school, as a part of the California State Study Project on Programs for Gifted Pupils, a separate class for gifted pupils was organized on a full-time basis. This year an additional separate class is planned. However, separate classes have been organized more extensively on a part-time basis than on a full-time basis in the city.

Reserve teachers and administrators meet with gifted pupils for one or more hours per week in a number of schools. Separate classes make it possible to plan and center instruction around individual interests and capabilities. Separate classes emphasize the development of a better understanding of subject matter, as well as the development of critical-thinking ability. These classes provide many opportunities for creative expression, which utilizes special interests and abilities to develop individual projects.

In general, our acceleration policy, planned on an individual basis, allows for one semester of acceleration in elementary school, one semester in junior high school, and one semester in senior high school. Normally, children are considered for acceleration early in each

1. *Education of the Intellectually Gifted* (Los Angeles: Los Angeles City School Districts, January, 1958).

educational level. Additional consideration is given, at all grade levels, to acceleration of intellectually gifted pupils.

A more liberal acceleration policy is recommended for highly gifted pupils who have an intelligence quotient of approximately 160 or higher, as determined by an individual psychological study.

Any method of providing for gifted pupils must give pupils an extended experience that differs from the usual instructional program. Enrichment does not mean giving gifted pupils more of the same kind of work. Enrichment does mean adding depth and scope to the course. It means giving assignments that will challenge problem-solving ability, organizing ability, creative ability, and ability to communicate findings. It is of particular importance that gifted pupils participate in planning and setting goals. They should know both the "how" and "why" of learning.

Summary

The small-group approach, made possible through cluster grouping of gifted pupils, has been used successfully in the Los Angeles City Schools as one method of meeting the needs of gifted children. Some of the advantages of this procedure may be summarized as follows:

1. Cluster grouping provides for efficient use of teacher time by placing a group of gifted pupils with one teacher rather than with several teachers and by reducing the range of differences among pupils for the teachers.

2. Cluster grouping utilizes recognized learning techniques suitable for gifted pupils by (*a*) helping pupils to assume responsibility for their own learning through increased independent activity; (*b*) involving pupils in many phases of the learning process; (*c*) allowing for individual pupils to discover facts; (*d*) encouraging pupils to work at a rapid pace; (*e*) providing opportunities for intensive study; and (*f*) stimulating a broad exploration of subjects and related topics.

3. Cluster grouping utilizes new approaches to the use of audio-visual materials and equipment in the form of the listening center, the viewing center, and the kits of learning materials.

4. Cluster grouping facilitates the development of individual interests and provides an added basis for consideration of acceleration.

5. Cluster grouping stimulates and motivates gifted pupils by placing them in association with other children of similar abilities and interests.

6. Cluster grouping increases the learning of the gifted pupil.

Although cluster grouping is serving its purpose well, it is recognized that organization in itself is of little value if it is not accompanied by a genuine interest and desire to enrich on the part of the teacher. In any kind of program, the creative teacher is the most important key to challenging gifted children.

> The sublimest song to be heard on earth is the lisping of the human soul on the lips of children.
>
> —Victor Hugo, *Ninety-Three*

A Canadian Plan

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ALTHOUGH the general clamor about programs for the gifted undoubtedly stimulated us, we like to feel, in Toronto, that we have had a basic interest in providing for brighter pupils for some time. Our philosophy has been that every child who proves to be distinctly superior in any constructive ability should have an education which enables him to employ his talent to the fullest extent. This article deals with our attempts to put this philosophy into actual practice.

Toronto Public Schools

Toronto has ninety elementary public schools, about one-third of which are organized on a Kindergarten-to-Grade-Eight basis. The remainder are centrally located "Senior Public Schools" (seventh and eighth grades only), each surrounded by three or four satellite "Junior Schools" (Kindergarten to Grade Six).

All schools have a program for gifted pupils, and all except the "Senior Schools" have some scheme of acceleration. All have been involved in philosophical hassles about identification, segregation, and organizational plans for talented children, but we shall not report on these matters, nor on our present research schemes here.

What follows is a limited description of some scattered sections of our programs in action. Because our schools vary in size, abilities of pupils and teachers, and socio-economic area, as well as in the organizational way previously mentioned, a great variety of programs has developed. No single overall plan or blue print could be used to meet the varying needs of individual schools in the city.

Kinds of Programs

Enrichment within regular classes, "withdrawn" groups, "streaming," special classes for the gifted, and Saturday morning classes—all are used as ways of meeting the needs of the gifted children in Toronto schools.

The Saturday morning classes involve about sixty highly gifted children. Only three or four schools have special classes that include none but gifted children, so that the bulk of our programing is done via enrichment, "streaming," and the "withdrawn" groups.

The only common method of caring for gifted pupils not used in the Toronto system is what might be called complete segregation—the assembling of gifted children from several school areas into a central class or classes.

Sample Enrichments

The following examples of enrichment within the regular class are presented:

1. *Kindergarten.* A "Post Office"

activity involves discussions, games, songs, painting, and construction. Two gifted children are responsible for the cash register and the making of change. One of them reads a story about a postman to the group.

2. *Grade One.* During a unit of "Family Fun and Work," two gifted pupils prepare a scrapbook of cutouts from old magazines.

3. *Grade Two.* Once a week, as part of the language program, four gifted pupils are assigned the responsibility of "Fun Hour" (ten minutes). They tell jokes or riddles or recite jingles or tall tales. They must be able to read the contribution before presenting it. They screen items brought in by the class.

4. *Grade Three.* Three gifted children who achieve well in reading are excused from the regular developmental reading lesson to browse in the classroom library. During "Poetry Time" they read poems which they have selected to the class.

5. *Grade Four.* Two gifted boys carry on a "project" on methods of travel (social studies). They paint a mural, write essays, and make models. As a culmination, they, along with three classmates, conduct a demonstration during parent visitation.

6. *Grade Five.* Six gifted pupils study weather and gradually build a weather station. They make thermometers and other simple measuring devices.

7. *Grade Six.* Three gifted pupils do research on "Our Number System." As part of their study, they make an abacus from a wire coat hanger and wooden beads. They compete with one another in making computations, taking turns using the abacus. They demonstrate to the class.

8. *Grade Seven.* A committee of eight gifted pupils writes and publishes a class newspaper. The whole class becomes involved. The committee also leads the class in the writing of "Our Own Illustrated History Text." They send a copy to the Inspector of Special Education.

9. *Grade Eight.* Gifted pupils lead the class in the establishment of "The Northern Lights Club." They study distinctly Canadian projects and events of the day. They organize a visit to the St. Lawrence Seaway while it is still in the construction stage.

Enrichment in a Fifth-Grade Class

Miss Harris has a group of seven gifted pupils in her class. She and her principal identified this group of pupils after studying group IQ scores and achievement records. Only two of the seven children had been tested individually, but Miss Harris had no real doubts about the ability of anyone in the group; each one simply stood out in work and attitude.

The seven pupils are all members of "withdrawn groups" of one kind or another and are absent from class once or twice a week for these groups. Nevertheless, this account deals with enrichment carried on for them within their classroom. What commenced as a rather nebulous plan to broaden their studies in areas of interest to them quickly crystallized when the group was called together. Interests were in one or more of three general areas: current scientific developments (chiefly rockets), original work in written English, and art.

Planning meetings of the group are held during noon hours or after 3:30 p.m., whenever necessary; work periods

are conducted from 1:30 to 2:30 p.m. each Wednesday. The planning sessions are regular round-table discussions. Although the aim of these meetings originally was to plan enough work to last through the Wednesday periods, the planning sessions, with their stimulating and productive group discussions, have proven to be of considerable value in themselves.

The scientists soon produced a papier-mâché model rocket and a collection of items from newspapers and magazines.

The writers produced a series of stories and plays and began to work on one of the latter for presentation at a school assembly. For this purpose they found it necessary to draw in some of their classmates to serve as supporting actors and property assistants.

The would-be artists focused on picture study and appreciation. They studied prints of paintings and, each week, presented a "picture of the week" to the class, commenting on the picture and the artist.

Work with this group of seven pupils has been Miss Harris' first experience in trying to provide a year-long enrichment process, but she has thoroughly enjoyed it. The extra work involved has been more than offset by the heightened interest and enthusiasm of the pupils. She feels that they have profited, too, not only from the things learned, but also from their increased ability to do research, to solve problems, and to do their own planning.

"Withdrawn" Groups

The weakness of the enrichment program—that it requires an excellent teacher—is the strength of the withdrawn program. Taking gifted pupils from their own classes and providing something special with an expert instructor has many advantages. This is another common way of dealing with gifted children in Toronto schools. The big disadvantage of this method is that it requires extra staff personnel or requires a teacher to give up a spare period.

Among the groups organized in this way are chess clubs, stamp clubs, French classes, German classes, science clubs, mathematics and science clubs, violin classes, brass and woodwind classes, music (appreciation) clubs, drama groups, photography clubs, reading clubs, a mineralogy group, and a debate club. Instructors are teachers with spare periods (and only teachers of grades seven and eight normally get spares in our system), vice-principals, consultants, supervisors, and parents. Many of these "withdrawn" classes are held during the school day, but some take place during after-school hours.

In a typical school using this scheme, the principal has an assistant whose function is to help him with office and administrative work and to act as school librarian. In addition, she conducts a withdrawn reading club at the sixth-grade level. Twelve children, drawn from three different classes, comprise this group which meets twice a week for sessions of thirty-five minutes. The school provides the children with sets of books so that all may read the same book at the same time.

Pupils alternate as chairman, discussion leader (who prepares questions for group), and evaluator. Usually one new chapter of the current book is read prior to each club meeting. The "free discussion" technique is used, and pupil in-

volvement is intense. In this school there are five such "withdrawn" groups.

"Streaming" and Special Classes

"Streaming" of classes of one grade, so that all the better pupils of the grade are in one of these classes, is becoming more and more widespread in our schools. This is particularly true in the "Senior Schools" where there are several classes of each grade. In such schools slow learners with IQ's below 75, for the most part, have been directed to a Junior Vocational School. Other academically retarded pupils have been specially placed in academic vocational classes. Hence, it seems logical to group all the gifted and superior children into one class in each chool, leaving about six to eight heterogeneously arranged classes in each grade. Thus the gifted are segregated, but within their own school.

In such schools, classes remain with the home-room teacher for half of each day and rotate to special-subject teachers for the other half. It is thus possible to schedule such activities as drama, science clubs, French clubs, advanced mathematics, and special music during the regular school day.

From the standpoint of efficiency in teaching and learning, a homogeneously grouped class has much to recommend it. In a few favorably located schools, it has been possible to organize special classes of all gifted pupils. Usually such groups are multigrade classes.

Mr. Martin Alexander is the teacher of one such seventh-and-eighth-grade class. Mr. Alexander was specially selected for this class, as were the pupils. It is sometimes argued that a teacher of the gifted must himself be gifted. Our experience has been that this statement is true if "gifted teacher" is defined in terms of ingenuity, willingness to experiment, and ability to adjust to a great variety of situations.

Mr. Alexander's class, for instance, uses no spellers, has its own chess club and French drama group, and makes a monthly field trip or tour. What gifted children need is not "more of the same," but rather a chance to delve and investigate, an opportunity to peer through windows and to venture through doorways into hitherto unseen fields of knowledge and experience. A "Special Class" can fill this need.

Saturday Morning Classes

As an extra enrichment for highly gifted pupils and as an experiment in using community resources to challenge and interest gifted pupils, a few special classes are held on Saturday mornings. In one special mathematics class, thirty eighth-grade pupils, chosen from the top 1 per cent of the school population (on the basis of IQ's), met regularly with a prominent Toronto problemist and mathematician.

The group discussed the bases of our number system and compared it with other systems; visited the plant of International Business Machines Company, Limited, to witness the application of the binary system to digital computers; solved and composed "alphametic" puzzle-problems. The group members became so involved in the fascination of numbers that attendance was close to 100 per cent, in spite of the fact that pupils were giving up their much-cherished Saturday mornings. Similar classes are held in art, mineralogy, and biology.

Gifted Underachievers

One aspect of the whole area of gifted children that has caused us much concern in Toronto is that of the gifted underachievers—the individuals who do not perform so well in school as their high intelligence scores would lead us to expect. Our efforts in this regard have been chiefly in the nature of concentrated case studies, involving teachers, principals, school nurses, psychologists, and parents.

Many of our case studies revealed the difficulty of changing patterns of behavior for these children. Perhaps the dream of having "gifted underachievers" reach their apparent potential is unrealistic. At any rate, one of the results of these endeavors has been a heightened realization on our part that a high IQ is only one of the qualities needed in order to be a high achiever.

A Continuing Program

So much for samples of our program in action. No one realizes its deficiencies more than those involved in it. Indeed, annual meetings and conferences are held to search for improved methods of identification, teaching methods, and school organization. In these sessions, public-school principals play the leading role.

The city is divided into six administrative districts. Each district has one or two "Gifted Child Committees," headed by district conveners. The conveners guide the program in their own districts and send representatives to the "Central Committee." This latter committee acts as a clearing house for ideas and problems and gives focus and leadership to the city-wide program. It is to this voluntary organization of principals that all the credit must go for the extensive variety of activities that is offered to gifted pupils in Toronto schools each year.

Admittedly, our program is diverse and to observers, may appear to be moving in opposite directions. Nevertheless, such a mixture of viewpoints and plans has been deliberately encouraged. Present needs do not permit delay until all research findings are complete. Our great variety of school backgrounds demands a multipronged approach.

Gradually, certain trends are developing—for example, the trend toward more streaming of the gifted into special classes, and the movement towards more varieties of withdrawn programs with specialist-instructors. Nevertheless, we feel that enrichment programs by regular teachers will be, for a long time, the mainstay of our action program.

An exciting by-product has been the way the special activities thus organized have enriched hundreds of classrooms, involving many pupils in the nongifted categories. We believe that no special scheme of organization which detracts from this process would result in a net gain. We further believe that, as all of our teachers develop to provide the diversified program implied in the term "enrichment," many other educational values will accrue to our system.

All human wisdom is summed up in two words—wait and hope.
—Alexander Dumas the Elder

When Schools and Parents Share Their Knowledge

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Housewife and Mother
Portland, Oregon

EYES twinkling, an eighth-grade boy, acting as master of ceremonies for a talent assembly last spring, assured the audience, "I know you will enjoy this girl. She's not just talented — she's gifted!" The resultant laughter by the parents and students had a healthy ring that provided a rewarding moment for many of us—another bit of evidence that Portland is learning to take the "gifted child" in stride.

This conclusion, of course, will be immediately recognized as subjective, without scientific validity, and the writer will be identified as a parent. By way of defense, let me admit in advance that we parents often use this approach; we usually evaluate programs by our observation of their effect on one child—our own. This factor makes communication between the schools and us difficult at times. Nevertheless, since this communication is so completely fundamental to the welfare of a child, this article is intended to report the special attention given to parents while important experimentation was taking place in the Portland curriculum. It produced some happy results, both in acceptance and in public support.

It should be noted, briefly, that Portland's program for the gifted began in 1952 with experimentation financed by the Fund for the Advancement of Education of the Ford Foundation. We have completed seven years, two of which have been supported entirely by local and state funds. What parents are doing about gifted children must be interpreted within the framework of the philosophy and program which have emerged in that time. All of this information has been reported in previous publications, and a four-year study soon will be available.

It is sufficient, here, to report that the plans for educating the gifted and talented are an integral part of the general curriculum plan of the schools. A broad definition of "giftedness" and an inclusive identification system have been combined to select comparatively large numbers of children as "exceptionally endowed." As a result, the term "gifted child" is seldom used by parents any more.

Fear that we would be educating a group who would consider themselves as an "intellectual elite" was a ghost that was laid to rest some time ago. Parents became aware that the academically talented are only one group of all the children who are better served by the general upgrading of curriculum which has taken place. Care has been exercised that no children should feel themselves persons apart.

Portland schools have not permitted parents to shift all the duties and obligations of the home to the schools. Ad-

ministrators and wise parents, community leaders in the P.T.A.'s and on the school board, have sought to increase mutual interplay and reliability of schools and parents in erecting a secure, but challenging, educational environment for children of all degrees of native ability.

Parents in Groups

If parents were to assume a valid and continuing influence in "gifted" activities, their role had to be established. Professional educators did most of the work, but they wisely enlisted parents in planning and early implementation.

Educators undoubtedly envisioned some bad moments as they sought parent participation without dictation, but the schools that made parents full partners in shared knowledge were rewarded with large and enthusiastic audiences. The secret seemed to be in staying with the matters at hand—problems we parents were living with at the moment. This approach precluded neat plans made a year in advance or any highly formal organization.

For example, when students received achievement-test scores, we received them, too, at a group meeting. These meetings were lengthy and informative, because we received expert help in learning to recognize what those tests may tell us and what they may not tell us.

Other group discussions were held when it was time to forecast student programs for the next year. We were prepared to reduce some of the conflicts at home by having previously aired our sweeping convictions on liberal arts, humanities, and science and having received assistance in bringing these views into focus. A reasonably technical explanation of the differences among children in comprehension of abstract mathematics paved the way for serene, interested acceptance of high-school algebra offered to relatively few eighth-graders.

Discussions of choice of college, career information, military service, availability of scholarships—all were planned by parents who attended with their students.

Qualified parents are serving as lay members of the city's curriculum committee. The initial stimulus for the studies of services to gifted children came from a board of directors which included parents who created a climate and established a policy which has made possible this and subsequent improvements. Parents with highly professional contributions have provided a useful forum where needed—a domestic court judge, a specialist in rehabilitation, and many others.

The important point is that communications between schools and parents were established with dignity, eagerness, and mutual respect. When parents were provided with facts, not rumors—with stimulation, not cynicism—many of them proved themselves capable of making valuable contributions.

Parents as Individuals

By whatever route, parents seem to travel full circle to a fundamentally American premise, whether stated formally, as the goal of a school curriculum, or informally, by parents and students. We recognize first that each person is an individual, different from everyone else, but we insist that this identity develop within the person himself. We

balk at identification from outside, which denies freedom for personal goals and aspirations or seems to include a "manipulated" pattern for living.

Parents seem to be paradoxical in their reaction at this point. "Johnny is different with the differences which make him Johnny, but whatever the school is giving the Jones boy across the street, Johnny should have." But parents are one of the reasons for the individuality of Johnny. Knowing this, the schools have consistently strengthened the foundation of their programs when they have adapted to family variables. On the other hand, family has been strengthened when the schools have helped them to understand Johnny.

For every child there is a foundation of varying solidity, built upon the values which his parents, and their parents before them, bring to him. It is a question how far programs in behalf of his particular giftedness can carry him away from a familiar family pattern, without detroying his equally necessary stability.

The nation's first health problem being mental illness, we are acutely aware that brilliant minds can operate effectively only when accompanied by a healthy emotional structure. Awareness of the stressful nature of marked increase or variation of curricular demands led to our insistence upon family understanding and participation in these changes.

All individual curriculum counseling is done with parents present, if possible. Accelerated courses and special offerings for the particularly gifted are presented as an opportunity rather than as an honor. Inasmuch as this same method is used for counseling students who need remedial work or a slower pace, it is largely responsible for the relief of parental fears that the best efforts of the schools are directed toward the gifted. This procedure serves to place decision for the route the student will travel upon the student himself, in conference with his parents. Moreover, it provides an emotional safeguard for the familiar foundation which we mentioned earlier.

The needs which arise in this process are as varied as parents and students, but the school staff reports one reaction which never varies: Parents unfailingly lend their wholehearted support to any plan which will help a student achieve; they will accept any recommendation in this behalf with gratitude.

Parents in the Community

The utilization of resources for children of special interest and abilities was under way in Portland long before the program for gifted children, but the realization of the need has undoubtedly improved the status and use made of all of them. The following examples will be but a partial list.

Since 1923, Portland has had a unique and highly professional junior symphony orchestra which is supported by voluntary contributions. It includes eighty boys and girls under twenty-one years of age who have demonstrated superior talent, who are willing to rehearse three times a week, and who can work from the unrevised scores of the world's great orchestras. The junior symphony stands as an exciting goal for youngsters with musical interests and abilities.

The Portland Art Museum, also supported by voluntary contributions, has for many years offered a wide variety of classes to students of all ages on Saturdays during the school year and daily

in the summer. These classes are hugely attended, as students try their hands in every known medium. Samples chosen for the museum's permanent collection attest to the degree of excellence which can be reached by these talented youngsters.

The Portland Civic Theatre has long provided special experiences for all ages of students. Saturday classes during the school year and summer-school sessions include every phase of dramatic expression: designing and building scenery, creative dramatics, music and dancing, and performances by children.

Public-school summer sessions are supported with tuition paid by students. In spite of this, they have grown astonishingly in the last three years.

Elementary "summer camps" provide accelerated, as well as remedial, reading and mathematics. The camps also furnish offerings in music, art, and creative dramatics. Able high-school students are enrolling in "effective reading" classes, designed to improve critical analysis, speed, and comprehension. Every subject-matter field has students enrolled.

The newest community-sponsored resource is the Oregon Museum of Science and Industry, with its program and support coming from the entire state on a voluntary basis. The museum, itself, is a monument to the special science interests of students. The exhibits range from a planetarium to a transparent lady, electronically operated for demonstration of body functions; from a ship upon which the student may actually operate all the navigational and control instruments to a microzoo; from a telephone system upon which one sees and hears his own voice in a demonstration of microwaves to eggs hatching before one's eyes. The educational offerings are legion.

The do-it-yourself science experiments entered in the science fair last year numbered 67,000 as compared with 400 entered in 1951. Summer camps where students may study biology firsthand or dig fossils or pursue marine biology have waiting lists from all over the nation. There are science adventure trips over the state, research grants in money and materials for high-school seniors, and every conceivable aid to parents who are trying to meet the needs of science-oriented youngsters.

Conclusion

Parent participation in Portland is by no means uniform throughout the city. Many contributions are omitted from this abbreviated report, since no useful purpose would be served in supplying such detail. Successful parent assistance, in fact, seems to be keyed to the desire and ingenuity of each school. Plans operate with sincerity when they are homemade.

More money, more counselors, more of everything (except children) would improve our present efforts, but nothing that money can buy is basic in the beginning. A professional staff which gives more than lip service to the recognition of "home" as a major childhood influence is a fundamental necessity. Parents, who, in turn, recognize the professional importance of the teacher and provide him with understanding and encouragement, also are essential.

This report simply implies that, when everyone tries, communication between the home and the school can be established and that parents can contribute significantly to the educational process.

CHAP—Canton's High-Ability Program

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DURING recent years, many people in Canton had expressed concern over the inadequate approach which we had followed in educating our gifted children. In January of 1958, therefore, a committee was formed for the purpose of submitting recommendations to the Superintendent of the Canton Public Schools in regard to the direction the schools should take in developing the intelectual talents of these children.

This committee comprised personnel in all educational and administrative areas as well as two lay persons. For several months, the committee studied the problem, visited other school systems that had already initiated gifted programs, and discussed the matter at great length in group meetings. Finally, the committee submitted an outline of recommendations to the superintendent. On the basis of these recommendations, a program was established.

The objectives of the program were to provide broad educational experiences commensurate with abilities; to develop superior work habits and study skills; and to develop leadership, reflective-thinking, and creative abilities.

Selection of Students

For the purposes of our program, gifted children were defined as persons with IQ's of 125 or more, based on individual (Binet) intelligence tests. The children were screened for individual testing on the basis of group intelligence tests which had been administered in grades two, three, and six in previous years. Preference in selection for the individual testing was given to those students who had the highest group-test ratings.

When a child had been found eligible for the program, he and his parents were invited to a personal conference with the elementary supervisor. During this conference, the parents and the child were informed of what was being planned so that they could make an intelligent decision in regard to participation in the program.

In essence, they were told that three schools had been chosen to house the experimental CHAP classes. These schools had been selected on the bases of available rooms and high neighborhood concentration of eligible children.

There were to be a mixed third-and-fourth-grade class, a mixed fifth-and-sixth-grade class, and a seventh-grade class in each school. Each school was to have the same number of classes, and the children were to be allowed to go to the nearest or most convenient school. The program was to be limited to high-ability children, and no more than twenty-five pupils were to be assigned to a room.

Basic fundamentals, as taught in all classrooms, were to be stressed. With this foundation, the depth and scope of the curriculum were to be enriched.

Parents were told that they would have the prerogative of withdrawing their child at the end of the school year simply by notifying the school officials.

The testing of the children and the interviewing of the families were accomplished during the summer of 1958. When school commenced in September, two hundred and seven children were listed on the CHAP rolls.

Instructional Personnel

Meanwhile, the teachers and principals who had been selected to teach the gifted classes were taking summer courses and, in many ways, were preparing themselves for this new venture. The teachers were selected on the bases of proven ability, amount and quality of training (a bachelor's degree was mandatory), and, desire to teach these gifted children.

During the first school year, the teachers met monthly with the elementary supervisor for exchange of ideas. They visited each other's classes and classes of the Major Work Program in Cleveland. Observation of one another helped the teachers to realize that their problems were not peculiar nor unique; moreover, they acquired new ideas and learned new techniques. The most important result of the visits, however, was that they gave the program a united emphasis and direction.

The Program

The CHAP program was, and continues to be, basically one of enrichment —not acceleration of content or grade. For this reason, each high-ability classroom was equipped with materials not found in every classroom: encyclopedias, reference works, two typewriters, and supplementary readers and textbooks.

As to methods of enrichment, we found that doing research and then interpreting that research in five- to twenty-minute talks was a worth-while technique. The children made evaluation forms and followed them after the material had been presented. The teacher normally entered the children's evaluation period only as another student. This training in research and speaking helped to broaden the children's already wide interests.

Typewriters in the classroom helped the children in the research and study that they performed. To prevent the boys and girls from acquiring bad habits of typing (e.g., "hunt and peck"), they received expert instruction at the area high schools and followed a personal typewriting manual.

Field trips played a greater part in the lives of these children than they did in most classes. The children took trips to a greenhouse, meat-packing plants, and the library; some of them even went to Pittsburgh.

Inasmuch as books play a large part in the education of any child, the Canton schools have been fortunate in having a school library in every elementary building. Each of these libraries is serviced and maintained by the Canton Public Library.

The CHAP children used not only the school library, but also the public library. CHAP students in the upper three grades were allowed to hold adult service cards, because, with their wide

range of interests and high-reading levels, these youngsters soon depleted the juvenile shelves.

Evaluating and Reporting

The teachers found, towards the end of the first report period, that they were unable to grade the children fairly on the basis of only a few weeks' work. Therefore, report cards were not issued the first term. In place of them, parent conferences were conducted.

After discussing the problem of evaluation at great length, we decided on the following procedure: Children were to be graded as they would be in any regular class. That is, if they were in the fifth grade, but doing better than fifth-grade work, they were to receive *A*'s or *B*'s. If they were working right at grade level, they were to receive *C*'s, and so forth.

In order to supplement and expand this report, we devised another evaluation form that would tell parents how the child was progressing and developing in relation to his own ability. This evaluation form, similar in some respects to the Montclair, New Jersey, report card,[1] was used as a supplement to the regular report card during the second and fourth reporting periods. A copy of the supplementary report form was mailed to parents of children in the CHAP program, and a copy was kept by the reporting school.

As often as possible, the gifted children were grouped with their peers outside of regular-classroom academic work. Physical education, recess, instrumental and vocal music, assemblies, student council, and athletics provided opportunities to place them with other children.

The gifted classes were not designated in the schools as CHAP classes; rather, they were identified by the name of the teacher or by grade level. This does not mean that a social problem never existed; however, the response from parents and children indicated that the problem was negligible.

One teacher was prompted to write, "The competition among students motivates most of them to higher levels of achievement and reduces egotism." This factor, in itself, helped to eliminate the spawning area of many social-adjustment perplexities.

Evaluation of the Program

Our approach is being evaluated through testing and through analyzing data from questionnaires sent to parents, children, and teachers. As this article is being written, the tests have not been evaluated from a group standpoint; therefore, we are unable to make valid appraisals based on these test results.

Nevertheless, the responses to the questionnaires indicated a wide acceptance and approval of the CHAP classes.

Eighty-eight per cent of the children indicated that the pace of the class was about right; 7 per cent thought that it was too slow; and the remaining 5 per cent believed that it was too fast.

All of the children indicated that they had learned to collect and present information in oral form. As for better work habits and study skills, 97 per cent of the pupils reported that they did somewhat better in their schoolwork under the new program than they had

1. Robert E. Gitelman, "Two Report Cards Are Better Than One," *NEA Journal*, Vol. 48, No. 3 (March, 1959), pp. 33-34.

ever done previously. This last figure compared favorably with the opinions of the parents.

Perhaps the greatest indication of the success of our approach was that 95 per cent of the children returned to the CHAP classes for the second year.

One of the drawbacks to our program, voiced by all persons concerned, was the mixed-grade arrangement. In an attempt to overcome this deficiency, for the second year of the program, we organized straight sixth-, seventh-, and eighth-grade classes and one mixed fourth-and-fifth grade class for two of the schools. In the third school, we organized a fourth-and-fifth-grade combination, a sixth-and-seventh-grade combination, and a straight eighth-grade class. Space limitations prevented us from establishing all straight grades.

In addition, special classes involving third-grade children were discontinued during the second year. In our situation, with children coming from all parts of the city and with the third grade being primarily a developmental year, we found some adjustment problems.

We are continuing to study the problem of helping our gifted children in the primary grades and in other grades not now included in the CHAP program. In addition, we are now considering the feasibility of adding a foreign language to the curriculum and extending our eighth-grade mathematics program to include more concepts of algebra than at present.

We believe that we are headed in the right direction. Only time and continued evaluation will tell. We are encouraged, however, when many parents write, as one did, "The whole world has opened for our daughter, and learning has become an exciting challenge with new avenues always in sight."

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Teaching Critical Thinking

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On the assumption that critical thinking is important and useful and that it can be taught, a unit of instruction in critical thinking has been developed in Lansing, Michigan and taught in conjunction with certain courses. The unit has been taught in eighth- and ninth-grade social-studies courses to students who have been classified as gifted on the bases of high intelligence and advanced reading ability.

It was believed that these students would have the insight to be able to understand and use critical thinking. In Terman's (19) studies there were indications that the gifted might be expected to find great need for critical-thinking ability in that they are most likely to enter professions and business, usually after extensive academic education.

The primary purpose of the unit was to teach fundamental understanding and basic skills of critical thinking. The unit was taught in 1956 and 1959 and, in part, in 1957 and 1958. All of the material of the regular courses was covered, but time-savings, resulting from the superior ability of the students made it possible to include the material of the critical-thinking unit. Often material from the social-studies courses was used as a vehicle for the critical-thinking unit.

Critical thinking was defined as careful, accurate thought, to provide a working definition that appears to pinpoint the common element in the definitions prescribed by major writers in this area of interest (2, 4, 6, 16). The unit was organized in a way designed to help the teacher clearly distinguish between functional versions of an idea, structural versions, negative versions, subordinate parts, and correlaries.

Vocabulary

In an effort to increase the student's field of reference, the first activities of the unit were designed to equip the student with nomenclature and basic concepts useful in the study of critical thinking. According to the Harvard Report (9), the effective thinker can handle terms and concepts skillfully, without confusing words with things. He is empirical; he goes beyond facts to implications. These first activities introduced fields of knowledge, terms, and dichotomies.

Each student was required to prepare and deliver a short (two-minute maximum), definitive report on a field of knowledge. The reports, assigned from a prepared list, ranged from broad fields such as philosophy, social science, and physical science to narrower fields such as chemistry, roentgenology, and astronomy.

The breadth of a field was considered an important aspect of its definition. As the series of reports progressed, discussion was led to bring out the

overlapping of fields, inclusion of one field by a broader one, and ways in which some fields complement others. The last report was on semantics itself and led to discussion of the importance of semantics in all matters involving interpretation and thinking.

Certain terms found to be of high frequency and of importance in critical thinking were assigned for definition in class-wide homework assignments. These definitions were then discussed in class to specify the particular meaning required for the unit. These terms were dichotomy, concept, academic thought, altruism, aptitude, and ability. Terms were added to this list as the unit progressed.

Other terms arranged in pairs to form dichotomies were studied in a similar manner with special emphasis on the way or ways in which each pair formed a dichotomy. These dichotomies included abstract-concrete, subjective-objective, connotation-denotation, intrinsic-extrinsic, and general knowledge-specific knowledge.

Discussion of attitudes in critical thinking was considered an important part of the student's increased field of reference.

Having established working nomenclature for the unit, the student was considered ready for some discussion of thinking itself.

Elements of Thought

This part of the unit was started with an introduction to a classification of methods of thinking and discussion of how they occur together and appear to describe the same process. The Harvard Report (9) describes effective or logical thinking as the ability to draw sound conclusions from premises; as the capacity to extract universal truths from particular cases and, in turn, to infer particulars from general laws; as the ability to discern a pattern of relationships; and as the ability to understand complex situations where logical methods are inadequate.

Borrowing also from Dewey (5) and Mead (13) for detail, three concepts of method of thought were studied: reflective thinking, relational thinking, and inferential thinking. Examples were drawn from the subject matter of the course and from questions of current import to the students in attempting to clarify these concepts.

There was a tendency for these gifted young people to resist these ideas because, on analysis, most examples were found to contain these methods in combination rather than in a pure state. As the students expressed it, they were accustomed to memorizing exact answers to all important questions. They found it difficult to work with qualified appraisals and partial knowledge.

Following a pattern suggested by Stroud (18) and by Pressey and Robinson (17), further understanding of the nature of thinking was sought in an attempt to break down thinking into five major functional elements: training in finding and learning facts; developing a wholesome respect for facts and for the influence of thinking in life; recognizing the tentative character of thinking when sufficient information is not available; understanding the basic concepts of careful thought; and developing skill in the use of thinking techniques and procedures.

One class session was spent in the library to provide instruction in the use of resources beyond the instruction re-

ceived by all students. Discussion and examples, ranging from current everyday situations to abstract problems, were used to clarify the ideas involved in each of the elements.

Study of the fourth element, basic concepts, gave special attention to three basic concepts. The first was that accurate and complete information is required for the development of definitive conclusions. The second was understanding of the multidimensional nature of critical thinking. The third was an introduction to the thinking processes. The latter included association and recall and the theoretical relationship between conscious and unconscious. Discussion in this area was kept at an introductory level, but care was used to avoid conflict with theory as expressed in the writings of Freud (7, 8), Allport (1), Cronbach (3), and Hilgard (11).

The fifth element, skill in the use of thinking techniques and procedures, was studied from two points of view: identification of errors in thinking and problem-solving technique. Each of these viewpoints was given major attention.

Error in Thinking

For this unit, the approach considered most useful and most readily understandable was classification of the major sources of error in thinking. Errors in thinking were considered to come from four major sources. The first was erroneous information. The second was insufficient information, including insufficient knowledge and experience. The third was erroneous method of procedure, such as may occur in an experiment. The fourth was erroneous method of thinking.

After examination of nine lists relating to this topic (6, 10, 12, 18), it was believed that all the errors found could be classified within one of the four sources of error previously mentioned. If an error were included in the last category, erroneous method, it could be subclassified into one of six types of error in method. These six types were failure to be objective and realistic; overgeneralization; terminological ambiguity; reasoning from false analogies; inflexible mental set; and failure to identify assumptions.

Students practiced identifying thinking errors within this framework from a wide variety of materials such as texts, class discussion, news media, episodes at school, and selected articles. Extra credit was given if errors made by the teacher were caught and identified.

Problem-Solving Technique

As part of the preparation of a term-paper assignment, the students were introduced to several lists of steps in problem solving. A six-step list, prepared from the Michigan State University Board of Examiners' list (2), was selected for use. The steps included defining the problem; stating the hypothesis; gathering the evidence; evaluating the evidence; organizing and summarizing the evidence; and drawing conclusions.

The students were instructed to select a problem in the area of the general course topic about which historical evidence could be gathered. The students sometimes had to narrow their topics after starting their research. The research paper was to be written with a section specifically devoted to each of the six steps. This was not intended as

an ideal problem-solving experience. It was intended to demonstrate more clearly the function of each of the steps. This it did, although it sometimes proved a very awkward and rigid structure for specific problems.

During the current year, the six-step procedure is being replaced by a functional three-step procedure: defining the problem, presenting the evidence, and drawing conclusions. Much is being suggested about each step, but the emphasis is on adjustment to the individual problem within each step.

Each term paper was triple graded. The first grade covered English and the procedure. The second covered the content of the paper, the quality, and the use of sources in relation to the problem chosen. The third was an evaluation of the thinking in it. This last evaluation involved such considerations as the avoidance of errors in thinking, the reliance on unstated or unproven assumptions, and the relating of the conclusions and the evidence to the stated hypothesis.

Among the papers written for this unit, there were many which displayed much work and surprising insight. One paper, "Democracy Versus Communism," compared the two ideologies for the staying power of the philosophy basic in each. The paper showed great insight and very little bias. Another one, on "Chinese Communes," did a good job surveying current materials and evaluating them. Several students undertook the job of comparing various aspects of the Russian and American educational systems.

Some pupils tried to handle evaluations relative to the United Nations and world government. One student chose disarmament, and another one conducted a telephone survey based on the question, "Should the U.S.A. and the U.S.S.R. stop nuclear testing?" The class was both surprised and perturbed when this student reported such replies as, "I am not concerned about that because we are moving to San Francisco."

Still another student examined the question, "Are hospitalization insurance rate increases justified?" She did her literary research in several libraries, including one in a hospital and another in a near-by university. She was stymied when she found that a journal article which she needed was not available because all the libraries contacted sent their journals to the bindery on the same schedule. At the bindery she was judged too young to be interested in such matters.

Another student, investigating the situation in Washington the night Lincoln was shot, did considerable research; finally, he concluded that the major sources were too biased and that too much information was missing for him to reach positive conclusions. Still another pupil, studying the influence of a free press on democracy, did a careful job of reporting on both positive and negative influences.

Introducing Statistics

Late in the unit there was a very limited introduction to fundamental statistical procedure. Dale (4) believes that some elementary competency in this area will improve critical thinking even this early in school. Concepts included were sampling procedure, median, mode, mean, and range. Standard deviation and the normal curve were introduced and very elementary interpretations were discussed.

In addition to the procedures already mentioned for the introduction to and use of critical thinking, some time was devoted to the analysis of material written by others. This analysis included identifying assumptions and their influence; locating and identifying errors in thinking and in information; and analyzing, in a descriptive sense, the procedure followed in solving a problem.

An example of the material studied is Nelson's (2) paper on "Fluoridation and Tooth Decay," which lends itself to the identification of assumptions and their influence and to the analysis of procedure.

In one class session an attempt was made to demonstrate fine and scholarly critical analysis. This session was planned, with the use of an opaque projector, around a paper on ambiguity in geometric-form multiple-choice questions and on principles and procedure for avoiding the ambiguity (14).

The unit was concluded with the reading and discussion of a paper by Mowrer (15) on the definition of normal behavior. This paper covers the actual discussion of various concepts of normality from the viewpoint of people from twelve different fields of knowledge and the final conclusion their chairman deemed them to have reached. The reading and discussion of this paper seemed to offer the student a picture of critical thinking in process at its best.

REFERENCES

1. Allport, Gordon. *Personality* (New York: Henry Holt and Co., 1937).
2. Board of Examiners, Michigan State University. *Critical Thinking* (East Lansing, Mich.: Michigan State University, 1955).
3. Cronbach, Lee. *Educational Psychology* (New York: Harcourt, Brace & Co., 1954).
4. Dale, Edgar. "Teaching Critical Thinking," *The News Letter*, Vol. 24 (January, 1959).
5. Dewey, John. *How We Think* (New York: D. C. Heath & Co., 1933).
6. Dressel, Paul, and Mayhew, Lewis. *General Education Explorations in Evaluations* (Washington, D. C.: American Council on Education, 1954).
7. Freud, Sigmund. "A Note on the Unconscious in Psycho-Analysis," in Vol. 12, *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, ed. James Strachey (London: The Hogarth Press and the Institute of Psycho-Analysis, 1958).
8. Freud, Sigmund. "The Interpretation of Dreams," in *The Basic Writings of Sigmund Freud*, ed. A. Brill (New York: Random House, 1938).
9. General Education in a Free Society: Report of the Harvard Committee (Cambridge, Mass.: The Harvard University Press, 1948).
10. Grommon, Alfred. "Coordinating Composition in High School and College," *The English Journal* (March, 1959), pp. 130-131.
11. Hilgard, Ernest. *Theories of Learning* (2d. ed.; New York: Appleton-Century-Crofts, Inc., 1956).
12. Junior Town Meeting League. *Critical Thinking in Current Affairs Discussion* (Middletown, Conn.: Junior Town Meeting League, Wesleyan University, 1956).
13. Mead, George. *Mind, Self and Society from the Standpoint of a Social Behaviorist*, ed. Charles Morris (Chicago: The University of Chicago Press, 1934).
14. Menger, Karl. "On the Design of Grouping Problems and Related Intelligence Tests," *The Journal of Educational Psychology*, Vol. 44 (May, 1953), pp. 275-287.
15. Mowrer, O. "What Is Normal Behavior?" in *An Introduction to Clinical Psychology*, ed. L. Pennington and Irwin Berg (2d. ed.; New York: The Ronald Press Co., 1954).
16. Noll, Victor. "The Habit of Scientific Thinking," *Teachers College Record*, Vol. 35 (October, 1933), pp. 1-9.
17. Pressey, Sidney, and Robinson, Francis. *Psychology and the New Education* (rev. ed.; New York: Harper & Bros., 1944).
18. Stroud, James. *Psychology in Education* (New York: Longmans, Green & Co., Inc., 1946).
19. Terman, Lewis, and Oden, Melita. *The Gifted Child Grows Up*, Vol. 4 of *Genetic Studies of Genius* (Stanford, Calif.: Stanford University Press, 1947).

When They Are Gifted

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THE title of this article should raise the questions: Gifted in what? and at what stage of giftedness? "The concept of giftedness is becoming more dynamic. The very word 'gifted' is a misnomer if it implies some innate capacity or 'gift' bestowed on the child at birth, once and for all. We now look at giftedness as a process of becoming." (2) Recognizing that a process exists, the teacher's expectations of the "gifted" should vary with each child.

Creativity a Process

Teachers need to understand "creativity" as a process and to accept the challenge that it can offer in their work with gifted pupils. Creativity is highly individual and full of feeling. It needs the proper environment for growth.

Gardner Murphy (1) in his recent book, *Human Potentialities,* says there is general agreement that acts of creativeness arise in a context involving four phases. First, minds mark out the pathway of creativeness because they are sensitive to something in this challenging and fascinating world. Second, creativeness appears when this sensitivity leads to the acquisition of storehouses full of experiences which consolidate themselves. It is from these great storehouses, based upon years of accumulation and incubation, that the third phase, the "sudden inspiration" of the composer, the writer, or the scientist, derives. The fourth step, which always emerges in the process of creativity, is the sifting and testing, the critical evaluating and perfecting of the work done.

The creative teacher, Murphy says, "can represent the mature evaluative judgment of the social order. He can help the creator to create if he can share the creator's struggle."

Environment for Creativity

Do our schools provide the kind of freedom which will foster creativity? This question is basic in our efforts to provide for maximum development of "gifted" students and teachers. Both groups need a stimulating atmosphere which permits individualistic endeavor.

One of our high-school English teachers described this freedom when he wrote, "One of the most important tasks of the literature teacher is to encourage his students to read *innocently.*" Innocence, he said, is "a fearless faith in the 'rightness' of one's own responses. Innocence, then depends upon self-confidence. Intellectual self-confidence depends, in turn, upon the breadth and richness of the student's associations." The role of the teacher is to provide fresh experiences that will encourage the student to develop greater insights in an atmosphere free of rigid expectations or influence.

Creative Writing

Another high-school English teacher related how her tenth-graders produced interesting, thoughtful, original, and well-written stories, after they had read freely and discussed the personal impact of the stories which they had read. She gave her pupils an assignment to write an original story on a borrowed theme. Then she conducted individual conferences with the pupils, through which she shared the creative child's struggle to write.

The teacher felt that "the conferences were stimulating to creative thinking" and that her pupils "took time and pains to develop humor, subtle characterization, and style.

Young authors made the following comments: "It was the hardest but the most interesting experience I have ever had." "This is the first time I ever knew what I was doing when I wrote a story." "For the first time I had control of the story and saw it as a whole in its development."

Individualized Reading

Working with a group of gifted seniors, another English teacher utilized an individualized reading program to help pupils develop greater skill in critical analysis and deeper insight into self. She aimed to create an awareness of one's responsibility to use his talents for world understanding and world betterment, as well as the generally accepted aims of developing discriminating readers.

For her students she recommended the following literary works: Merezhovski's *The Romance of Leonardo da Vinci,* Rolland's *Michaelangelo,* Maurois' *Ariel,* and Rolland's novel *Jean Christophe.*

The student may identify himself with the struggles for "self-realization," which characters out of the past have experienced. It is possible that the pupil may find some security through reading and the rather deep analytical discussions that follow.

The teacher said, "After much specific and general reading the classroom becomes the proving ground for new ideas." Next she introduced her students to works with broader implications. Members of the group read to discover national and individual attitudes toward war as found in Tolstoy's *War and Peace,* Remarque's *All Quiet on the Western Front,* Romains' *Verdun,* and Ibanez's *The Four Horsemen of the Apocalypse.*

A consideration of individual attitudes brought the students to the great question of the individual in relation to his government. Extremes in reading choice helped to indicate the vast scope of this problem in the history of mankind. Sophocles' *Antigone,* Wouk's *The Caine Mutiny,* Silone's *Bread and Wine,* and Pasternak's *Dr. Zhivago* show various ways of meeting dictatorship. These works also demonstrate the ultimate need to be true to the loyalties exacted by the reader's own inner light.

The discussions, which resulted from a reading program such as this one, continued the unconscious evaluation already begun within the student himself. The real evaluation, however, will come during college or even years later when the student sees in retrospect the turning point in some of his thinking. Therefore, this English teacher expressed a realization of creativity in the gifted as a "process of becoming."

The creative experiences for intellectually gifted English students described in this article are examples of the many activities which require original thinking and writing; wide reading of quality materials; an evolving development of ideas; revised thinking based on discussion and additional writing; and analytical and critical evaluation. Creative teachers can adequately provide for the needs of the gifted through experiences and associations similar to those just described.

Critical Thinking

When pupils are "gifted," that is, gifted intellectually, we aim to develop growth in the power to think independently and abstractly; to analyze and read critically and innocently; to experience the process of creativity and, through it, the joy of discovery in our school-oriented work.

Any discussion of methodology, the content of courses, or even the methods of identifying the gifted secondary-school pupils must take into account the nature of the adolescent, his needs, his interests, and his feelings. A study of adolescent culture gives us many clues or guidelines for the development of successful school programs, whether for the academically talented or for other groups who have specialized school needs.

We find in our community—one which reflects the typical characteristics of a well-to-do suburban culture—that experimentation in education is favorably accepted. We find that pupils respond to the exciting atmosphere which research activity can bring.

For most adolescents, there seems to be "prestige" attached to being selected for certain group activities, regardless of the nature of the activities; on the other hand, a "gifted" student selected for particular recognition may analyze critically the nature of the selection and the purpose of his being chosen.

Educators have verbalized that a major goal of education is the development of critical thinking. The gifted child is likely to begin to test adults in school situations. The way in which teachers and administrators meet the challenge of this test is a most important part of the educational process. This represents a vital, yet subtle, influence that our schools have on the education of gifted pupils.

Mathematics and Science

In our schools there is a dominant interest in mathematics and science, as there has been in our American culture for the past generation. Our concern with the improvement of science and mathematics instruction centers on various goals. First, there is a desire to bring the curriculum up to date in mathematics, physics, chemistry, and biology, and to give more attention to those youngsters who are gifted in these studies. To accomplish this end, we have an on-going in-service program for teachers concerned with the developments in "modern" mathematics.

Another major goal in the improvement of mathematics and science education for the gifted is to achieve more integration of mathematics and science in the secondary schools than presently exists. There is too much separateness in most high-school curricula.

Bringing together mathematics and science teachers to develop curriculum will improve not only the program of

studies but also the quality of instruction.

Another goal is to build better attitudes of acceptance and understanding of science in this nuclear age. Pupils need to learn to think critically about how science affects their lives. This generation must know not only what science *is*, but also what science is doing. Moral issues are involved, and young people need to know how to evaluate the results of scientific research in a world which is growing closer together in larger communities.

Mathematics Experimentation

In the Cheltenham Township, Elkins Park, Pennsylvania, Public Schools, we are conducting a study of the effects of varied instructional procedures and content on attitudes toward mathematics and on mathematical achievement in our junior high schools. In the first year of the experiment the high-ability seventh-graders entering junior high in 1958 were divided into four groups. The students were matched on intelligence, arithmetic achievement, reading comprehension, and teacher ratings.

One of the groups was accelerated through a traditional arithmetic program. By the end of the year, the students in this group had demonstrated, by their scores on objective arithmetic tests and on a prognostic test in algebra, their readiness for the study of algebra.

Two of the groups followed the prescribed seventh-grade material, but spent time on a series of "enrichment" units covering history of numbers, number systems, powers and their meanings, etc.

One of these enrichment groups then moved into eight-grade arithmetic and studied additional "enrichment" units dealing with measurement and statistics, operation of computers, laws of arithmetic, topology, etc. The second of the enrichment groups entered upon the ninth-year Illinois Mathematics Program after a brief period spent on essentials of arithmetic.

The fourth group continued as a control group.

All four groups were pretested on a series of attitude and achivement measures. All the groups will be studied throughout junior and senior high school to determine the relative effectiveness of the various approaches.

This experiment is being conducted co-operatively by our school district and the Horace Mann Lincoln Institute of School Experimentation at Columbia University. Thus far, it seems that enrichment material represents a type of acceleration, as the nature and depth of the content is similar to material in the higher grades. It is, therefore, difficult to discuss "enrichment" without discussing acceleration.

Mathematics-Science Seminar

In Elkins Park, we offer a mathematics-science seminar for gifted pupils, which utilizes community resources to develop our staff and program. Teachers screen and recommend for the seminar those ninth-, tenth-, and eleventh-grade pupils who express interest in the seminar. The seminar meets in the evening as a noncredit activity.

The seminar staff comprises men and women who are professionally engaged in scientific endeavors and who are vitally interested in sharing their knowledge of and enthusiasm for science with youth. After two years, we now have

a staff of fifty persons and two seminar groups composed of approximately eighty pupils. The level of work in the seminar presents a real challenge for the gifted pupil.

The lecture-demonstrations which were of particular value to the students were those on topics not covered in the typical high-school program: The Biology of Cancer Cells; Programing the Digital Computer; Transistors; Numerical Tricks; Molecular Orbital Theory; Superfluidity of Liquid Helium; Classical Theorems of Mathematics; Theory of Relativity; Two-Person Game Strategy; and Radioactive Dating. Students who are members of the seminar make interesting and profitable visits to industrial plants and research facilities.

Summary

Many current statements assume that the "gifted" represent our hopes for the future. If this be true we must continuously ask, "Gifted for what?" To find the answers to this question, we will need to do more and more research, more and more critical evaluation of our present systems of school organization, more and more analysis of identification procedures of the gifted, and more and more acceptance of individualized study with the guidance of mature, artistic teachers than we are doing at present.

The gifted do represent our hopes for the future if the process of education is more than an intellectual exercise. The gifted must learn to "feel" as well as to think. Their hopes, aspirations, and powers of imagination are subtle sources of feelings, through which they can learn the art of appreciation, and can develop greater sensitivity toward others and better acceptance of themselves. They can become educated emotionally as well as intellectually.

As Judge Learned Hand put it, "Life is not a thing of knowing only. Nay, mere knowledge has properly no place at all save as it becomes the hand maiden of feeling and emotion."

REFERENCES

1. Murphy, Gardner. *Human Potentialities* (New York: Basic Books, Inc., 1958), p. 131.
2. Strang, Ruth. "The Nature of Giftedness," *Education For The Gifted*, Fifty-seventh Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press [Distributor], 1958), p. 70.

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Recent Research on the Gifted

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A GROWING body of research on the gifted indicates a widespread interest in them and in the educational programs which can provide for their optimum development. Increased emphasis on the importance of the gifted in our society sometimes leads to criticisms of inadequate educational provisions.

Since appropriate educational experiences must be planned in terms of differences between children, we should increase our knowledge of the interests and needs of children with superior abilities. While generalizing about them, however, we must be fully aware of the differences between individuals in any group of gifted children.

This report is limited to a review of recently published studies on the gifted in the following areas: family background, interests and attitudes, social characteristics, achievement, and educational provisions.

Family Background

Barbe (3) studied the background of 458 graduates of Cleveland's Major Work Program to determine the influence of heredity and environment on the development of the gifted child. The study indicated that parents of gifted children were about average in occupational level, educational level, and marital adjustment. Economically, however, the majority of the gifted came from upper middle-class families. Both this study and another conducted by Drews (12) indicated that a gifted child is usually an only child or the first-born in a small family.

A study by Bonsall and Stefflre (6) of the temperament differences between gifted and other high-school senior boys indicated that previously found superiority of the gifted in temperament stems more from socio-economic background than from any differences in gifted children as such. Most of the gifted in this study were from families in the upper three occupational levels (professional, managerial and official, and clerical).

Elicker (17), in a ten-year study involving more than 67,000 of our brightest high-school seniors, concluded that no group of our population, however defined, had an overwhelming monopoly on producing gifted children. He did find, however, that fewer gifted students, proportionally, came from the country or from communities with fewer than 2500 population. The majority of gifted students came from homes where the father was a professional man and a college graduate. Unlike the studies reported earlier (3, 12), the gifted child was seldom the only child and rarely the first-born in the family.

An interesting study was conducted by Davidson and Balducci (10) to determine the influence of social class and

sex on the verbal facility of very bright children. Family income was used as the indication of low or high social class.

There were no statistically significant differences in verbal facility as related to sex, social status, or the interaction of the two. Although there were no statistically significant differences, the means of the three measures appeared to reveal that boys were superior to girls in verbal facility, regardless of social status; that, disregarding sex, high-status children were superior to low-status; and that children from underpriviledged environments apparently acquired less facility with difficult words than did high-status children.

This study points out the need for providing programs rich in verbal experiences and general language skills for all children.

While the research is not completely consistent, studies generally show that children born to parents of higher occupational or economic backgrounds have a better chance of being classified as gifted than do children born into lower class homes. Some of the characteristics normally associated with gifted children, then, may actually be the characteristics associated with children from higher socio-economic backgrounds.

Interests and Attitudes

In planning to meet the needs of the gifted we need to consider their interests, attitudes, and preferences as well as their measured intelligence. There is considerable evidence that people work harder and find more success in those areas which are of interest to them and upon which they look with favorable attitudes. The teacher who knows how gifted students feel about their school experiences is in a much better position to offer effective guidance.

Cutts and Moseley (9) did a questionnaire study involving 673 gifted students, ages six to seventeen years, to determine their reactions to schoolwork.

Mathematics led the lists of "subjects liked best," "subjects liked least," "subjects making pupils work hardest," "subjects liked best and hardest," and "subjects liked least and hardest." In the last category, "subjects liked least and hardest," mathematics exceeded the next highest course by almost two to one.

An alarming number of students indicated little or no interest in subjects which would be important, if not essential, in their vocational choices. This study emphasizes the need for helping gifted students recognize the importance of interests and attitudes as well as aptitudes and abilities.

Dye (16) conducted a comparative study to determine the differences in attitudes toward school of gifted and average fifth-grade children. Although the majority of both groups indicated favorable attitudes toward school, a larger proportion of the gifted pupils was dissatisfied. One out of ten gifted girls and two out of ten gifted boys were unhappy as compared with one out of twenty average pupils. The majority of children in both groups favored learning a foreign language.

Dressel and Grabow (11) sampled the opinions of 502 gifted high-school graduates from six Michigan communities for reactions to their high-school experiences. Although many of these students had ranked in the top 5 per cent of their graduating class scholastically, they felt that their courses, on the

whole, provided neither stimulus, nor involvement, nor challenge. In spite of the current emphasis on science, the gifted students rated it only fourth in their list of most valuable subjects.

Elicker and Hess (18), studying the vocational interests of 12,154 bright high-school students, found more than half of the top 5 per cent of college-preparatory seniors planned to enter the critical career fields of teaching, engineering, and science research. The ratio of gifted women to gifted men who planned to enter the teaching field was approximately seven to one.

Brumbaugh (7) found gifted youngsters between the ages of five and eleven years, for the most part, chose the professions as their vocational preferences. They also preferred to work in a "special area" within their chosen profession and generally aspired to a place of high recognition within the profession.

A study (35) of the reading habits of forty-one former "Quiz Kids" showed a strong interest in biography and autobiography. Brumbaugh (7) also found biographies to be the favorite reading interest of the gifted.

It is apparent, then, that research is helping to define the interests and attitudes of the more capable students. It appears that the gifted have a more critical attitude toward school than have average children and that many find their classes lacking in stimulation and challenge.

Mathematics seems to be of primary concern to the gifted, as it leads in both "liked" and "disliked" subjects, while biographies and autobiographies are high in free-reading interests. Gifted children, even at an early age, show a vocational preference for the professions, and, at the high-school level, the larger percentage indicate primary interest in the critical fields of engineering, teaching, and science research.

Social Characteristics

Along with the emphasis on providing educational programs which challenge the more capable students to high-level intellectual performance is an increasing interest in the social adjustment and life success of gifted individuals.

MacCurdy (27) found superior science students to be somewhat antisocial and disinterested in sports, athletics, and public entertainment. They concentrated on solitary activities of an intellectual, mechanical, or scientific nature. Witty (35), after studying the development and adjustment of forty-one former "Quiz Kids," reported that they are not of a solitary and sedentary nature. They participate in varied and generally wholesome recreational activities, including cards and active sports.

In a study involving children with Stanford-Binet IQ's of 150 or higher, Gallagher (19) found these children to be significantly more accepted as "best friends" in regular classroom situations. This significance was not affected by sex or grade level. Gallagher found, however, that children with IQ's from 150 to 165 were more likely to be accepted than children with IQ's above 165.

Grace and Booth (21), in a study of 294 heterogeneously grouped children in grades one through six, concluded that children do not become social isolates within the elementary school. The most gifted were still among the best liked in the sixth grade as in the first grade. High intelligence alone is not sufficient cause for isolation (30).

Miller (28) conducted a study to determine significant differences in social status and socioempathy between mentally superior, typical, and retarded groups in regular upper elementary classrooms. He found the superior students to be best liked and most wanted as friends by classmates. The superior students' social status appeared to be linearly related to intelligence. The superior students in this study were also more aware of their own and other's sociometric status than were the typical and retarded students.

These studies help to clarify other characteristics of the gifted. The evidence generally shows a high degree of acceptability by their peers. There is some indication, however, that students with exceptionally high intelligence are not accepted as readily as those who are less markedly gifted. There is disagreement concerning the athletic interest and outgoing nature of brighter students. This disagreement may stem, in part from the design of the studies rather than from inherent differences in the gifted students.

Achievement of the Gifted

One emphasis in research has been on the characteristics associated with high-achieving and low-achieving gifted students. Are different personality traits associated with the two groups? Why does a pattern of underachievement become evident? Do gifted students tend to fluctuate from high achievement to low achievement?

A study by Walsh (32) involved two carefully matched groups of twenty high-achieving and twenty low-achieving boys from grades two through five. Significant differences between the two groups were found in several areas. The high achievers saw themselves as freer to make choices and freer to communicate with their parents than the low achievers. They also more frequently presented a feeling of belongingness in relation to their parents and saw themselves in constructive, purposive, and resourceful activities.

Haggard (22) studied forty-five gifted children at the University of Chicago Laboratory School for five years. In third grade, high general achievers were sensitive to socialization pressures. They felt that their parents were over-protective, pressuring for achievement, and lacking in emotional warmth. By seventh grade these students had antagonistic attitudes towards adults, although they got along better with parents, teachers, and peers than low-achieving gifted students.

A commentary on our educational provisions for such children is implied by the fact that the high achievers showed a marked increase in level of anxiety and a decrease in intellectual originality and creativity between grades three and seven.

Most research shows a desirable total personality pattern for high achievers. Barrett (4), in an intensive study of thirty-two gifted secondary students in Toronto, concluded that achievers came closer to the "guidance head's" conception of a well-integrated personality than did underachievers. They tended to be more aware of the nature of their adolescent disturbances and more constructive in their efforts to cope with them. They had greater feelings of individual worth and greater ability to persist in the face of difficulties.

Both underachievers and achievers had emotional disturbances or feelings

of inadequacy, and there were no significant differences between the two groups in courtesy, co-operation, and self-sufficiency. The pattern of underachievement was apparent by grade five. Thereafter, high achievers remained high, and low achievers did even more poorly at the secondary level.

Much research in the area is unpublished. Gowan (20), in a summary of five unpublished studies by his students, concluded that gifted underachievers are self-sufficient and unsociable. They identify with their parents or other adult models less well than gifted achievers, and they have fewer salable skills.

The relation of home and parental characteristics to the achievement of the gifted has been examined also. In one study (4), parents of underachievers were less interested in education than were parents of achievers; moreover, they were overanxious, oversolicitous, or inconsistent in their attitudes toward their children. Drews and Tehan (13), in a report on the mothers of gifted junior-high-school students, concluded that high achievers had a rigidly defined place in the home and that their mothers tended to be authoritarian.

In an examination of another dimension of achievement, Williams (33) found a significant relationship between classroom acceptance and the academic performance of over a hundred gifted children. More than four out of five gifted children who were high in total acceptance (acceptance extended by and to the group) achieved within or beyond expectancy, while more than three out of five children low in acceptance achieved below expectancy.

Although there are no sharply drawn lines which differentiate achieving and underachieving gifted, some broad outlines do emerge from these data. The achievers seem to have greater self-understanding and confidence, get along better with others, identify more with parents or other adult models, and persist to a greater degree in constructive, socially approved endeavors than underachievers. They are likely to come from authoritarian homes where parents are interested in education. The gifted are more likely to achieve well when they accept and are accepted by their classmates.

Educational Provisions

Accelerating students to higher grade levels, segregating them into special classes, and enriching regular classroom programs are the most common educational provisions for the gifted.

Witty (34), in a survey of elementary schools in 1951, found 21 per cent providing acceleration and 9 per cent having special classes. A 1956 report (31) of a questionnaire to superintendents in New York indicated that over 50 per cent used double promotion or some other form of acceleration, while 11 per cent had special classes. A 1959 study of elementary schools in Michigan by Durr (15) reported 15 per cent using acceleration and 33 per cent using a complete or partial segregation.

One method of acceleration involves the early school admission of mentally advanced children. Birch (5), in a study of forty-three children who were admitted early to first grades in Pittsburgh, found that the majority made satisfactory adjustments academically, socially, emotionally, and physically.

Hobson (23) made a study of the high-school records of over five hundred

gifted students who had been admitted to kindergarten early. He, too, concluded that early enrollment in school does not put "underage" gifted children at a disadvantage.

Justman (26) studied bright students who were accelerated by completing three years of junior high school in two years' special-progress classes. He concluded that the personal and social adjustment of gifted students is neither advanced nor hindered by such acceleration. Their academic achievement, however, is affected. Matched pairs of students in special-progress and normal-progress classes were compared on the bases of standardized tests (24), teachers' marks, and regents' examinations (25). The results indicated that students can do at least as well academically in two years as equally gifted students do in three years of regular classes.

Wider use of acceleration involves something more than convincing educators of its worth. There is the question of identifying the students who will profit from acceleration. Woolf (36) compared the intelligence quotients of students who had successfully completed an accelerated program with those who were unsuccessful in completing it. Although the successfully accelerated group had a median intelligence quotient of 118 as compared with 113 for the unsuccessful students, over 89 per cent of the unsuccessful group had intelligence quotients which were in the range of the successful students.

The evidence favoring acceleration for gifted students continues to mount; however, the evidence concerning the best methods of identifying students for acceleration is far from conclusive.

One of the best-known programs involving special classes for gifted students is in Cleveland. Barbe (2) received questionnaires from over four-hundred high-school graduates who had previously been enrolled in the Cleveland Major Work Program. Although some former students had suggestions for strengthening the program, less than 8 per cent of all those responding disapproved of it.

Brumbaugh (8), in a report on twenty-seven children who attended Hunter College Elementary School, concluded that gifted children who are identified at an early age and placed in homogeneous groups make better adjustments to their peers; do better academically; and continue in school to a higher level than gifted children who are not identified and grouped at an early age.

Dunlap (14) found that gifted elementary students who had special periods twice a week generally achieved more than those who remained in regular classes. Ryan (29) added more evidence by concluding that junior-high-school students who were regularly assigned to special reading classes developed more mature reading habits.

Good enrichment in a regular classroom has not been thoroughly evaluated as a method of providing for the gifted. Baldauf (1) reported a study in which regular classroom teachers were given special training in methods of teaching the mentally advanced. When the children in these classes were compared with a matched control group, there were no significant differences in total mean achievement, but there were significant differences favoring the experimental group in six of thirty-six possible subareas of achievement.

Although Baldauf's study is not conclusive, it does add support to the theory that special training of teachers may re-

sult in greater academic achievement of gifted children in regular classrooms.

A major factor in the dearth of research evidence on enrichment is the difficulty of properly organizing experimental groups for such studies.

Suggested Research

Recent research in the previously discussed areas has added information necessary for a fuller understanding of the gifted. As in many fields, however, it has also opened new vistas for experimentation.

Some works have led to conflicting conclusions which should be resolved by additional carefully controlled studies. Do children from professional and managerial homes stand a better chance of being classified as gifted than children from other types of homes? This general conclusion, which has been disputed, can be clarified by careful studies including a thorough description of the total population from which the children were drawn.

Do the gifted really participate to an above-average extent in sports? Two studies summarized here reached different conclusions.

Does a gifted child tend to be the first-born or the only child in his family? Here, again, conflicting evidence has been found in these summaries.

Most of the needed research, however, is suggested, not by conflicting conclusions, but by little or no experimentation in certain areas. For example, certain characteristics, such as great physical maturity and verbal facility, have long been associated with the gifted. Are these characteristics really a factor of social class rather than giftedness as such?

Many other fruitful areas for research also are presented. Studies are needed which not only compare acceleration, segregation, and enrichment with "regular" programs, but which also determine the values of such provisions when compared with each other. Are there inherent advantages in different degrees of segregation for the gifted? How can we best identify those students who would profit from acceleration? What specific factors cause the gifted to be more dissatisfied with school?

These and many other questions concerning the gifted have not been answered satisfactorily. Our provisions for the gifted will improve as continued study leads to sound conclusions through research.

REFERENCES

1. Baldauf, Robert J. "A Comparison of the Extent of Educational Growth of Mentally Advanced Pupils in the Cedar Rapids Experiment," *Journal of Educational Research*, Vol. 52 (January, 1959), pp. 181-183.
2. Barbe, Walter B. "Evaluation of Special Classes for Gifted Children," *Exceptional Children*, Vol. 22 (November, 1955), pp. 60-62.
3. Barbe, Walter B. "A Study of the Family Background of the Gifted," *Journal of Educational Psychology*, Vol. 47 (May, 1956), pp. 302-309.
4. Barrett, Harry O. "An Intensive Study of Thirty-Two Gifted Children," *Personnel and Guidance Journal*, Vol. 36 (November, 1957), pp. 192-194.
5. Birch, Jack W. "Early School Admission for Mentally Advanced Children," *Exceptional Children*, Vol. 21 (December, 1954), pp. 84-87.
6. Bonsall, Marcella, and Stefflre, Buford. "The Temperament of Gifted Children," *California Journal of Educational Research*, Vol. 6 (September, 1955), pp. 162-165.
7. Brumbaugh, Florence. "Earning a Living, or As the Bright Child Foresees It," *The Instructor*, Vol. 65 (June, 1956), pp. 56, 58.

8. Brumbaugh, Florence. "Our Youngest Intellectuals Thirteen Years Later," *Exceptional Children*, Vol. 21 (February, 1955), pp. 168-170.
9. Cutts, Norma E., and Moseley, Nicholas. "Bright Children and the Curriculum," *Educational Administration and Supervision*, Vol. 39 (March, 1953), pp. 168-173.
10. Davidson, Helen H., and Balducci, Don. "Class and Sex Differences in Verbal Facility of Very Bright Children," *Journal of Educational Psychology*, Vol. 47 (January, 1956), pp. 476-480.
11. Dressel, Paul L., and Grabow, John M. "The Gifted Evaluate Their High School Experience," *Journal of the Council for Exceptional Children*, Vol. 24 (May, 1958), 394-396.
12. Drews, Elizabeth. "A Four-Year Study of 150 Gifted Adolescents," A Report Presented to the American Psychological Association, December, 1957 (Mimeographed).
13. Drews, Elizabeth, and Tehan, John. "Parental Attitudes and Academic Achievement," Journal of Clinical Psychology, Vol. 13 (October, 1957), pp. 328-332.
14. Dunlap, James M. "Gifted Children in an Enrichment Program," *Exceptional Children*, Vol. 21 (January, 1955), pp. 135-137.
15. Durr, William K. "The Gifted Child," *Michigan Educational Journal*, Vol. 37 (October, 1959), pp. 188-189.
16. Dye, Myrtle G. "Attitudes of Gifted Children Toward School," *Educational Administration and Supervision*, Vol. 42 (May, 1956), pp. 301-308.
17. Elicker, Paul E. "Our Brightest High-School Seniors," *NEA Journal*, Vol. 45 (April, 1956), p. 225.
18. Elicker, Paul E., and Hess, Walter E. "Top Students To Enter Critical Fields," NEA *Journal*, Vol. 45 (September, 1956), p. 357.
19. Gallagher, James J. "Peers Acceptance of Highly Gifted Children in Elementary School," *Elementary School Journal*, Vol. 58 (May, 1958), pp. 465-470.
20. Gowan, J. C. "The Underachieving Gifted Child," *Exceptional Children*, Vol. 21 (April, 1955), pp. 247-249.
21. Grace, Harry A., and Booth, Nancy Lou. "Is the Gifted Child a Social Isolate?" *Peabody Journal of Education*, Vol. 35 (January, 1958), pp. 195-196.
22. Haggard, Ernest A. "Socialization, Personality, and Academic Achievement in Gifted Children," *School Review*, Vol. 65 (Winter, 1957), pp. 384-414.
23. Hobson, James. "Early School Enrollment," *Education*, Vol. 77 (February, 1957), pp. 48-50.
24. Justman, Joseph. "Academic Achievement of Intellectually Gifted Accelerants and Non-Accelerants in Junior High School," *School Review*, Vol. 62 (March, 1954), pp. 142-150.
25. Justman, Joseph. "Academic Achievement of Intellectually Gifted Accelerants and Non-Accelerants in Senior High School," *School Review*, Vol. 62 (November, 1954), pp. 469-473.
26. Justman, Joseph. "Personal and Social Adjustment of Intellectually Gifted Accelerants and Non-Accelerants in Junior High School," *School Review*, Vol. 61 (November, 1953), pp. 468-478.
27. MacCurdy, Douglas. "Characteristics of Superior Science Students and Their Own Sub-Groups," *Science Education*, Vol. 40 (February, 1956), pp. 3-24.
28. Miller, Robert V. "Social Status and Socioempathic Differences among Mentally Superior, Mentally Typical, and Mentally Retarded Children," *Journal of Exceptional Children*, Vol. 23 (December, 1956), pp. 114-119.
29. Ryan, Eunice G. "Reading for Gifted Children," *The Clearing House*, Vol. 31 (January, 1957), pp. 287-288.
30. Sheldon, Paul M. "Isolation as a Characteristic of Highly Gifted Children," *Journal of Educational Sociology*, Vol. 32 (January, 1959), pp. 215-221.
31. University of the State of New York, State Education Department, Division of Elementary Education. *A Study of Current Practices in Education of Gifted Children in Elementary Schools of New York State* (October, 1956).
32. Walsh, Ann M. *Self-Concepts of Bright Boys with Learning Difficulties* (New York: Bureau of Publications, Teachers College, Columbia University, 1956).
33. Williams, Meta F. "Acceptance and Performance among Gifted Elementary School Children," *Educational Research Bulletin*, Vol. 37 (November, 1958), pp. 216-220.
34. Witty, Paul. "Nature and Extent of Educational Provisions for the Gifted Pupil," *Educational Administration and Supervision*, Vol. 37 (February, 1951), pp. 65-79.
35. Witty, Paul. "A Study of Graduates of the 'Quiz Kids' Program," *Educational Administration and Supervision*, Vol. 38 (May, 1952), pp. 257-271.
36. Woolf, Leonard. "The Selection of Accelerated Course Students at the Baltimore Polytechnic Institute," *Journal of Educational Research*, Vol. 51 (September, 1957), pp. 11-15.

A Teacher's Responsibility: Understanding Group Behavior

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THE understanding of group behavior is an integral part of the teaching process. When groups and individuals exhibit unacceptable behavior and/or a lack of acceptable social relationships, it is of considerable importance to the teacher of the group.

Children who are socially unacceptable by their peers often exhibit emotionally unstable habits that affect all areas of their development. If children can be helped to acquire positive social assets, they may become more socially acceptable to their peers. Social acceptance, in turn, may increase their academic achievement.

A classroom in which there are very few socially acceptable intergroup relationships is likely to be below the level of optimum learning. The lack of social acceptance is one of the major factors involved in creating dissension in and out of the classroom. Groups, as well as individuals, exhibit both acceptable and unacceptable social behavior. It is the teacher's responsibility to help create a homogeneous atmosphere within the room by understanding the social structure of the class, in order to attain the goal of optimum learning.

A Sociometric Study

Sociometric techniques were used to study the social structure of a split-level sixth-grade class containing twenty 6A's and sixteen 6B's. The study was limited to one sixth-grade class over a period of twelve weeks. Pupils were asked specific questions which required them to make friendship choices. These choices were charted as sociograms, which are graphic devices used for recording social choices made by a group, to determine group patterns of behavior and the place of each individual within the group.

A classroom social-distance scale similar to a scale devised by Bogardus (1, 3) was used to chart the reaction of each pupil to every other pupil in the group. The information gained then was used to devise a series of group and individual tasks that would promote better social relations in the classroom.

Sociograms for this study were charted to indicate the general structure of the classroom and to identify the subgroups, cliques, and "pal patterns." The pupils in the older groups showed marked tendencies to choose only those children on their grade level, while the younger children chose outside of their own grade.

The sociograms also indicated a closed subgroup among the 6A girls. They were the most frequently chosen group. Moreover, they exhibited a high degree of social perception inasmuch as each star had two or all of her choices

reciprocated. There were only two other mutual choices made among the girls. Almost the same pattern existed among the 6A boys as among the 6A girls, whereas the 6B boys made four mutual choices. This situation may have resulted from the higher socio-economic status of the older group and from the parental pressure that is brought to bear on them to maintain their present social relationships because of the low socio-economic character of the neighborhood.

Sixty-six per cent of the twenty members of the 6A class had been together since their first year of formal schooling. Fifty-five per cent of the 6A's attended the same church and were active members in its youth organization. None of their parents were divorced, and the children enjoyed satisfactory family relationships.

Forty per cent of the sixteen members of the 6B class had been together since their first year of formal schooling. Fifty-five per cent of the 6B's came from broken homes and lived either with stepparents or relatives of their real parents. The socio-economic status of this group was considerably lower than that of the older group, and their family relationships were poor. Out of the eight pupils chosen five or more times, only one was from the 6B class.

Acting on the Results

The information obtained from the sociograms was used as a basis for reseating the pupils. Many of the 6B pupils chose members of the 6A class as first or second choices. It was possible to seat only a portion of the children next to their first choices, because the two grade levels had to be seated on opposite sides of the room.

Social studies and science groups were formed on the basis of the friendship choices; however, after two weeks, this procedure had to be discontinued because the groups were not able to work well together. This inability to work together was due, in part, to the difference in academic abilities. The 6A's did the work and the 6B's sat back and let them. When 6B's were placed in groups with only one 6A, the quality of the work improved. Friendship choices were considered, but they were no longer the basis for the work groups.

Arrangements were made with the physical-education teacher to choose traffic boys from the 6A class. Andy B., an isolate, was chosen in an attempt to raise his social standing. He had the

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highest social-distance score in the class. Nine children, or almost one-fourth of the class, checked the "Wish-he-were-not-in-our-class" item on the scale.

Andy came from a low socio-economic home and had very poor vision. He should have been in the sight-saving school, but his parents refused to send him. His attitude toward any type of discipline was poor. He was unable to work with any child in the room without getting into an argument. He did a fair job of assuming the responsibilities assigned to him through his traffic duties. While this assignment did not seem to raise his social status within the classroom, it did improve his behavior.

The school nurse needed helpers, and 6A girls were chosen to help her. Fae S. was given extra duties in an attempt to raise her social status. Fae was as highly unacceptable to her classmates as was Andy—a fact indicated by her score of 123 on the social-distance scale.

Fae S. came from a low socio-economic home; was unclean; was a poor student; tattled on her fellow classmates; and was not always truthful. The added responsibility that was assigned to Fae did not raise her social status to any great extent, but it did improve her personal habits, especially on the days when she went to the nurse.

Routine classroom jobs such as dusting, board-washing, and book-monitoring were assigned on a rotation basis by pairing off the children according to their friendship choices. These committees worked out very well and provided excellent opportunities for promoting relationships between the two grade levels.

Throughout the twelve weeks of this study, a number of sociograms were charted in order to follow the social changes of the class. The final set of sociograms indicated that the social structure had improved.

In twelve weeks the social structure of a class can change. The direction in which this change takes place can be manipulated; however, twelve weeks is too short a period to come to any final conclusions.

It is possible to affect the entire structure of the group when individual relationships are improved. The application of sociometric techniques and an understanding of the information gained permit the teacher to improve the social structure of a classroom and to raise the academic achievements of the pupils to some degree.

REFERENCES

1. Bogardus, E. S. "A Social Distance Scale," *Sociology and Social Research,* Vol. 17 (1933), pp. 265-271.
2. Botner, Taft B. "Sociometric Approach to Group Study," *National Elementary Principal,* Vol. 34 (February, 1955), pp. 32-34.
3. Cunningham, Ruth, and Others. *Understanding Group Behavior of Boys and Girls* (New York: Bureau of Publications, Teachers College, Columbia University, 1951), p. 171.
4. Gallaghin, J. J. "Social Status and Adjustment in School," *Elementary School Journal,* Vol. 58 (January, 1958), pp. 225-231.
5. Horace Mann—Lincoln Institute of School Experimentation. *How To Construct a Sociogram* (New York: Bureau of Publications, Teachers College, Columbia University, 1947).
6. Laughlin, Frances. *The Peer Status of Sixth and Seventh Grade Children* (New York: Bureau of Publications, Teachers College, Columbia University, 1954).
7. Minnis, Nellie I. "Sociometry as a Guidance Technique," *National Elementary Principal,* Vol. 34 (September, 1954), pp. 180-183.

"I Don't Know the Words"

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"I'd like to read if I knew the words" was the plaintive remark of a boy who was being given a diagnostic reading test.

This boy's statement furnishes an important clue to the cause of the majority of disabled readers. Word recognition, the initial step in the reading process, is a real problem for the beginning reader of the English language because of the difficulty in making the association between letter sounds and their printed symbols.

English Spelling

Only 26 letters are used to spell more than 600,000 English words. However, since we have approximately 43 speech sounds in our language, it is necessary for one letter or combination of letters to have several different sounds. These sounds may change from word to word, as g in *goat* and *giant; c* in *candy* and *city;* and *ch* in *chair, machine,* and *character.* The silent letters are also confusing, as in the words *know, lamb, write, gnaw,* and *cake.*

Learning to recognize a letter or a combination of letters by several different sounds is perplexing for the beginning reader. In many instances, according to modern pronunciation, the spelling of words almost defies recognition.

English spelling makes word perception extremely difficult. It means that some words must be remembered as visual images. This is due to the fact that the letter sound which is heard and the letter form which is seen when a word is pronounced may be two entirely different things.

Reading Readiness

Our modern way of life is instrumental in furnishing children who enroll in elementary school with a background of experiences that was not possible fifty years ago. Radio, television, and travel contribute to the general knowledge of pupils who enter school today.

The events of preschool and kindergarten days help to equip the child for making the association between spoken and printed language. This time in his life may be thought of as a reading-readiness period.

Listening is the first of the four facets of the language arts—and is followed by speaking, reading, and writing. When the child says his first word, he has started to build his speaking vocabulary. Up until that time, he had only a listening vocabulary. Children understand many words long before they can say them. Auditory awareness comes first; speech sounds must be heard before they can be reproduced.

Reading, the third phase of the language arts, will be much less difficult for the child who comes to the first grade with a large listening and speak-

ing vocabulary. When a new word is introduced, it is much more likely to have meaning for him if he has used it or heard it before. A spoken or printed word acts as a stimulus to form the mental image which the word symbolizes. If the child is familiar with the object which the word represents, he will be able to attach meaning to the word. This association will help him to remember the word when he sees it.

The child who is ready for formal reading instruction will have auditory and visual discrimination. He will be able to sit still and pay attention for fifteen- or twenty-minute periods; he will have a background of experiences to bring to his reading so that printed words will have meaning for him. As he sees words under pictures, he will gradually begin to associate reading with "printed talk."

Formal Reading Instruction

The child discovers his first printed words by means of labeled pictures. Then he begins to recognize each word by its general shape or configuration without the picture. He gradually ascertains that each word has character of its own and is different from every other word.

Children learn to perceive a good many "sight" words before the teacher begins to analyze them and talk about the separate letters in each word. When several words have been presented that start with the same letter, such as Tom, top, and toy, attention is called to the fact that these words commence with the same sound. Then the letter name for the sound is given.

In this way, letters of the alphabet are presented in a meaningful situation. They are taught incidentally from sight words at the beginning and not in sequence. After all of the letters have been introduced, they are learned in consecutive order.

The child's memory can only hold a certain number of words, so he needs a tool for unlocking new words and those that have been forgotten. Phonics, or making the association between speech sounds and their printed symbols, functions as the beginning reader's dictionary. Developing the knowledge for using letter sounds to work out new words is dictionary readiness. The child uses a key word to give him the letter sound he needs to attack an unknown word. For example, if he knows the word *ball,* and has learned the key word *fish* for the *f* sound, he can substitute the *f* for *b* and say *fall.* Skill in sound substitution is necessary for effective dictionary use.

In explaining phonetic rules to children, it is important that we insert the word *usually,* in order to prepare them for exceptions. If there is one vowel in a word such as *mop,* it usually has the short *o* sound; but in the word *sold* the *o* is long.

Some words, such as *could* and *some,* must be remembered as visual images. Writing the words to be learned is a mnemonic device for retention. It compels the child to observe each letter in its proper sequence and helps him to fix the details in his mind. Careful first teaching of the letter forms is very important in reading instruction.

Word Perception

The ability to respond instantly to a visual word form with the meaning it represents in the context is effective word perception. Unless differences in

letter forms are stressed, those that are similar in appearance may be confused. This is especially true of *b, d,* and *p; a* and *e;* and *m, n,* and *r.* Confused letters result in confused words and inaccurate reading.

Children differ in their ability to notice details. Some pupils in a class will develop into good readers because of their ability to observe differences in letter sounds and forms; while others in the same class, receiving identical instruction, will have poor reading ability because of their lack of auditory and visual discrimination.

Confusion of letter forms is a prevalent contributing factor among disabled readers. From the very beginning, children should be taught to distinguish and remember details in the letters of each word.

The boy, who said he couldn't read because he didn't know the words, certainly stated a basic principle. The ability to decipher the printed page is imperative; the reader must have the key which the author used when he recorded his thoughts. Unless the word or symbol for the idea which the author wished to convey is known, it is impossible to interpret it properly. Reading cannot take place without the initial step, which is word perception. Vocabulary growth is developmental and is geared to the abilities and requirements of every individual.

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A Study: Reading for Duty

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DURING the past several years many studies of reading have been made, and many reports have been given to us. Experts do not agree. We still are not quite sure whether or not Johnny can read. About the only thing everyone agrees upon is that Johnny should read.

The Problem

Where should we place the emphasis upon reading at this time? Should we be concerned exclusively with how reading is taught? Or is it just as important to concern ourselves with what reading is taught? Would it be much gain if Johnny could read better than any person ever has read before if he reads only the trash found on some newsstands?

If Johnny can't read the material he will need for college work or for a trade, is it correct to say that he can read at all? Regardless of how well Johnny reads the well-planned and predigested pages of his scientifically assembled school readers, if he lacks a background in the reading which a civilized graduate should have, has he been taught to read?

"Can Johnny read?" is a question which has shades of meaning. Millions of people in our country have been taught to read by many methods; many of the readers of this article may have learned to read by the old *ABC* method, but they can read. If they are reading *Hamlet* while Johnny, who has learned by the latest methods, is reading the comics, who is reading more efficiently?

One of the important questions we need to ask is this: Does Johnny like to read the things he is given to read, or does he read only because of a sense of duty? In other words, are we educating people who love to read for any reason other than for thrills or for gain? If millions of Johnnies love to read, why do we read fewer books per capita than the people of any other western nation —and why are there so few really good books among those we do read?

Choice in Reading

Concern with what the modern student reads has been largely confined to the possibility that cheap reading might bring about juvenile delinquency. We have assumed that Johnny should read proper material and that such material with a little arrangement and revised wording should do all we expect reading to do. We have forgotten that people can love to read, that reading has other purposes than to communicate information, inculcate morals, and train Johnny for a job.

A study of some of the textbooks designed for reading classes, many of them written by nonliterary writers, might indicate that the writers themselves were not interested in reading material as literature. It might indicate

that they could be sympathetic only with reading materials as prosaic instruments for communicating facts. They have failed to see the magic of words in literary masterpieces, and they have forgotten the art or submerged it in psuedo science.

Imagine what happens—indeed what has happened—when graduate student *A*, who has never written a line of anything but the most prosaic kind of composition, rewrites a children's classic for Professor *X*'s new book of reading material for the fifth grade, using only words within the supposed vocabulary of eleven-year-old children! It may be that the dullness of the content in many current school readers has done more to prevent good results in reading than any defects in methods used.

What do students, high-school graduates of the superior group who go to college, think they should read—not what do they like to read, but what do they think they should read?

A Short Study

Groups of college freshmen—nine classes over a period of three years—were asked to list ten articles or stories which they thought would be good ones for college freshmen to read. They were asked to make selections during the first week they were in college before they could be influenced by the instructor or by any assignment which might be given them. They were asked to make their nominations from any magazines with which they were familiar. No attempt was made at the time to direct them to any particular articles.

It is true, of course, that the students made their selections in the library, where good material was available, and that they probably made selections which they thought would be approved by teachers. These factors would affect their choices and, indeed, the results of any study.

Results

It is not possible to label choices as simply good or bad. Students had little opportunity to make really bad choices. Their selections could be classified only in an arbitrary manner. All magazines contain a variety of material ranging from the trivial to the useful, and a few publications occasionally contain something of permanent literary value.

The following list shows categories and the number of choices in each.

I. Utilitarian 368
(Advice concerning marriage, financial affairs, boy friends, housing, etc.)

II. Recreational .....
A. Useful 50
(As fishing for health)
B. Trivial 108
(Baseball star's sore thumb, movie star's love of pretzels, etc.)

III. Technical (Professional, health, education, science, etc.)
A. Useful 570
(Effectiveness of our Schools)
B. Scientific Value 27
(Report on discovery)
C. Trivial 26
(Report on the merely curious)

IV. News of the Day 540
(Report on France)

V. Complete Propaganda 2

VI. Geographical 56
(Most were travelogues)

VII. Personalities
- A. Useful-worth while — 28 (Studies of Churchill, Schweitzer, etc.)
- B. Trivial — 14 (Curiosities, faddists, etc.)
- C. Completely harmful — 1 (Report on worthless character)

VIII. Art, Music — 8

IX. Religion
- A. Popular — 18 (Reports on Billy Graham)
- B. Scholarly — 4 (Authentic discussion on such things as Dead Sea Scrolls)
- C. Survey news on religion 9

X. Literary
- A. Nonfiction — 18 (Serious discussion of books)
- B. Fiction — 3
- C. Poetry — 2

XI. Miscellaneous — 28

Meaning?

It would seem that we are educating a group of students who, when they read, seek something immediately useful. Nothing is to be criticized about the recommendations except for what is probably a tragic lack of balance. These young people evidently believe they have a duty to read; whether or not they find it possible to follow their own advice, they think it worth while to list works that outwardly, at least, suggest value. There are 368 listings of utilitarian items, 540 listings dealing with news of the day.

Little is here to suggest that many students believe that reading for pure pleasure might be approved. Has this been the result of our educational theory and our scientific doctoring of reading material? Or are we content, perhaps, to have reading be nothing but a search for facts? Have we tried and sometimes succeeded in turning reading into a dry, measured, clinically purified instrument for the communication of fact and fact alone?

Does all this have anything to do with the reading problem? Does Johnny become bored reading about Little Joey and Stella's visit to the stockyards where they learn a great deal about how animals are turned into meat? Does this keep him from being excited by the exploits of Kipling's little mongoose in *The Jungle Book*. (Poor Little Mongoose was revealed lately to be a very much overrated killer of snakes.)

The results of this study suggest to the writer that students are too often directed to only one side of reading, the useful side. When students think of reading which might help them to become educated, they think of factual reading. Perhaps it might horrify some students to think that reading might actually excite them. It may be that they have become so saturated with the scientifically arranged material in the readers that they think anything else is foreign. All this may be true or not; at least it might suggest a fruitful field for study. One recommendation might be to put interesting reading, written by literary people, back into the readers.

Another possibility may be indicated. If the student, to show his knowledge of a subject, is asked to show proficiency by checking true and false statements, may he not, in time, become convinced that education does consist in nothing more than being able to check the proper facts? He may logically ask why he should read for any other purpose than

to store his mind with facts. He is told that education is more than the mere memorization of items, but he makes his grades by reciting facts. The proof, he knows, is in the pudding. Who asks him to use his imagination, to think through a problem, to present a well-organized answer to anything? Does all this have anything to do with the problem?

In our concern with reading, perhaps we should study the entire situation—the what and the why as well as the how—and perhaps we should not forget the recent study which shows how amazingly few Americans read even one book a year. (We might remember, too, how few of the books read were worth reading.) It is all too evident that many people, including many students, are not interested in reading.

The real question is not why Johnny can't read—but why Johnny isn't going to read when he becomes old enough to do as he pleases. What and how much is he going to read when the teacher is not around to coax him or to give him a star beside his reading chart every time he reads about the little boy who had an exciting visit to Brazil and watched the natives drying the coffee beans?

A handful of sand is an anthology of the universe.
—David McCord, *Once and for All*

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The Teacher and Communication Theory

FRED R. DOWLING
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Stevens Point, Wisconsin

LINCOLN once said that sending troops to a distant battlefield was like shoveling fleas across a barn floor; you might have a full shoveful when you started, but, by the time you got to the other side, you wouldn't have many left. Lincoln might very well have compared the communication process with shoveling fleas, because, by its very nature, the communication process wreaks a similar toll.

Technique Is Not Enough

Every teacher who hopes to minimize this toll must first understand how this loss occurs. This understanding will never result from mastery of communication technique alone; rather it will come only from understanding the applicable theory or basic principles of the communication process. Robert Frost maintains that confusion results from the loss of the sense of form. Without the sense of form which theory supplies, any teacher who hopes to be a sensitive, skillful communicator is severely handicapped if not completely disabled.

It is understandable, yet regrettable, that communication techniques, rather than communication understandings, are emphasized today. Too few teachers have either the inclination or the time to pay much attention to the theory of the process. However, teachers who are concerned about teaching well cannot afford to neglect communication theory. Their skill in all phases of communication—from exchanging ideas in everyday classroom situations to counseling, and even to organizing communication channels—really depends on a sensitive appreciation of what lies behind the glib advice which is easily given today.

The purpose here is to discuss the most important tenet of a sound theory of communications—that the communication process is not simple, but highly complex. Appreciating just how complex it is, and in what ways, is the first step for anyone wishing to improve his own communicative skill and, although it seems gratuitous to suggest it, his own teaching skill.

The Communication Process

Traditionally, the communication process has been broken down this way: Sender — Encoding — Message — Decoding — Receiver.

The speaker or writer perceives something, senses a desire to communicate, and translates his ideas into verbal symbols; this is the encoding stage. Then he speaks or writes the message, which is attended to by the receiver. The receiver then decodes the message by attaching his meanings to the words he sees or hears.

After this has been accomplished, we say communication has taken place. Now, let's disect this apparently simple process and locate the hidden hazards.

First of all, because of incomplete sensory development, no sender can hope to have perceived perfectly what he wishes to communicate. No one can hope to be aware of all there is to see and understand in even the simplest situation. Hence, the communicator begins with a severe handicap. He cannot formulate his message perfectly in his own mind because he is incapable of sensing everything in any situation.

Even before we get to the encoding stage, the communication process, by its very restrictive nature, has begun to take its toll. The skillful communicator (the skillful teacher) must, perforce, be a sensitive, trained observer.

Two serious difficulties occur in the encoding stage. First, as we try to choose the best words to express our ideas, we are limited by the words in our active vocabularies. Beyond this, we cannot choose the words which seem the best or most appropriate to us because we are limited by the receiver's vocabulary. The words we choose not only must be in the receiver's vocabulary, but also must arouse in his mind an idea appropriate enough to our purpose so that understanding results.

In other words, beyond the inadequacy of our own vocabulary, we are hampered by the inadequacy of the receiver's vocabulary. We are hampered, in addition, by our admittedly inaccurate idea of just how broad his vocabulary is and by the very fact that his listening vocabulary is different from his reading vocabulary.

Second, we are limited in our choice of words by the inadequacies of our language. Our language fails us as we search for words to express subtle shades of meaning. Making the most of the words available to us is no easy or simple task. Speaking of the search for just the right words, John Mason Brown says, "Even if it [the right word] eludes its pursuer, the search for it seems to me to remain among the obligations of authorship. Indeed, the true hope of anyone who loves the language and respects it is to stumble upon, not the correct word or phrase, but the word or phrase which is so right that it seems inevitable." This feature of the communication process alone is enough to frighten even the boldest teacher.

Assume, despite the previously mentioned hazards, that we still have enough of a message worth communicating. We have observed well, chosen our thoughts wisely, and translated these thoughts into words we think the receiver will understand.

The prevailing thought is that all the sender has to do now is transfer his ideas from his mind to the receiver's mind. He bundles his ideas into a neat little package and sends them off on an unperilous journey to be opened and digested whole.

Unfortunately, the communication process just doesn't work this way, and thinking that it does causes more misunderstandings than any other misconception. All the careful teacher can hope to do is to stir up in the student's mind an idea close enough to his own so that understanding results. We might say that no matter how clear the idea is in the teacher's mind he can never literally transfer his idea to the student's mind. The teacher's skill in arousing in the student's mind a picture similar to that in his is the key to understanding.

The student translates the words he hears or reads according to his own experiences. Every idea that the teacher arouses in the student's mind finds substance or meaning not in what the teacher knows, but in what the student knows. For interest's sake, as well as for accurateness, the careful teacher provides the illustrations needed to make complex ideas clear.

It is no quirk that we find the able teacher giving example after example. Aside from the obvious interest factor he also minimizes a serious danger, that of letting the student dream up grossly inaccurate reproductions of what the teacher is talking about. Without these examples the teacher would expose himself to endless questions. Not even the most patient teacher would submit to the amount of questioning necessary for each student to verify all his guesses about what the teacher intended. Nor would time permit it. The answer seems to be that the teacher must foresee the blocks to understanding and remove them.

If each student could be objective in listening, many of our teaching problems would disappear. Since this is too much to hope for, we must accept the listener for what he is. A listener, the student, is a judge. He judges the sender; he judges the ideas sent; he judges the phrasing of those ideas; he judges his own reception of those ideas; and he even judges his own judging. His emotions, his prejudices, his stereotypes, and his concern about himself—all elicit interpretations of what he hears, to the extent that only a fool would claim that he objectively consumes the teacher's message or accurately assays the teacher's intent.

It is next to impossible, in any really effective classroom situation, to isolate and identify one person as a "sender" and the other as the "receiver." No man can hope to teach well, to communicate well, without guidance from those he tries to reach. The listener who fails to supply this guidance, or feedback, hurts no one but himself.

Hence, in any effective teacher-student relationship, each person is both a sender and a receiver at the same time. Even when the receiver is not present, as happens when we write, the sender must imagine that he is present. The sender must decide whom he is trying to reach. Moreover, he must ask himself all of the questions that his invisible audience would ask.

The Importance of Feedback

The research of Dr. Alex Bavelas, at the Massachusetts Institute of Technology and at the Bell Telephone Laboratories, shows that without this feedback, this interchange of ideas and questions, the communication process breaks down completely. So many errors result that the message just doesn't get across.

In a very simple experiment, Bavelas placed two men in separate rooms and required one, designated as the sender, to describe by telephone the exact position of a group of dominoes to the other, designated as the receiver. The receiver could only listen and try to follow directions. The sender had a chart, showing the position of the dominoes, but the receiver had only a plain sheet of paper and a supply of dominoes.

Bavelas found that, among twenty pairs of men, no pair could complete this test successfully. The lack of feedback completely nullified the sender's best efforts.

Dr. Bavelas then went on with two more experiments. In the first, the receiver could answer "yes" or "no"; in the second, he could say anything he wanted to say. In other words, there was a total feedback possible in the latter test.

Although the pairs of men in these experiments solved the problem with equal speed and accuracy, there was one important difference. The partners in the "yes-no" pairs distrusted each other's intelligence and ability to give and take directions wisely. Bavelas reports that, of the forty men involved, thirty-nine made slighting remarks about their partners and had little confidence in the accuracy of their work.

Bavelas also found that those who participated in the third experiment, in which there was complete freedom of communication, complimented each other and were confident that their answer was correct.

These simple experiments support what communication theorists have felt for some time—that, as the exchange of ideas, or feedback, increases, speed, accuracy, and morale of the communicators also increases.

Bavelas' research, duplicated and refined by others, supports the thesis that the communication process is not simple, but inordinately complex.

The teacher who doesn't appreciate the hazards of the seemingly simple communications process neglects an opportunity for increased success.

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A Sin of Omission

THADDEUS R. MURROUGHS
Optometrist, Santa Barbara, California

LENNY was a nonreader. He was fifteen years old when he came to the office of an optometrist for the first time. After many years, his parents still hoped to discover a cause for his reading difficulty.

Lenny was the picture of a bright-eyed, eager boy who wanted to learn to read, if only someone would show him how. His IQ was 120, and he was already an electronics "genius."

Lenny had just "graduated" from the elementary school. He had failed every academic subject for three consecutive years. He had repeated one grade, but to no avail. He had attended many schools—public, parochial, and private—in search of aid. He had been through several reading clinics and had received four years of remedial reading instruction. Lenny still was unable to read a single word correctly!

When asked to read the word *cap*, he asked if he could sound it out. After forty seconds, he sounded the word as *sod*. He explained this readily, since the letter *c* sounds as an *s*, the *a* as in *father*, and the *p* becomes a *d* upside down and reversed!

Attempts To Discover Cause

All physical examinations proved negative. Encephalography was normal. The psychiatric examination showed nothing wrong—yet! Dominancy relationships were judged inconclusive simply because they were not evaluated individually in light of up-to-date knowledge. All tests of reading ability had been administered; all types of reading training had been tried. Everything failed. No cause for the reading failure could be found.

Lenny had several "eye" examinations, with and without drops, but he never had an evaluation of his visual functions at the reading distance. The only evaluation which might prove useful in a diagnosis had been omitted.

Analysis and Rehabilitation

A complete visual-perceptual-dominancy analysis[1] by the optometrist showed that Lenny had four contingent causes for the reading retardation, and one resulting cause. The primary cause was a visual problem (inadequate performance at near); therefore, Lenny was given a bifocal. He showed a well-organized progression for reading from right to left, and he showed lateral reversals in letters and words. Special left-to-right training was instituted. Lenny could not discriminate visually between *b* and *d*, *h* and *r*, *m* and *w*, and many other letters which have similar components. Special training in visual discrimination was provided.

1. The author presents the complete format of analysis in "The Optometric Care of Retarded Readers," a paper scheduled for publication in January, 1961, by the Optometric Extension Program, Duncan, Oklahoma.

Since Lenny knew only a few of the letter sounds, association training between visual stimuli and oral expression was provided. He was unable to verbalize the short sounds of *a, e,* and *i* as different sounds. Visual stimuli, auditory reinforcement, and oral expression were used to build the necessary associations and discrimination of differences.

Simultaneous correction of these difficulties was instituted, along with guided instruction through visual training. After six hours of training, Lenny was able to read prepared material which he had not seen before. After twelve hours, his mother heard him read—and she wept. Needless to say, training was continued. After 120 hours of instruction, Lenny was able to read at sixth-grade level.

Visual Immaturity

June was not "busting out all over" for little Nancy, age eight, as she trudged home from her last day in school. She had received an *F* grade in reading and in spelling every grading period throughout the year. Her twin brother, in the same class, had received *A*'s in the same subjects. Nancy would have to repeat the second grade the following year, while her brother went on with the class. Nancy cried.

By fall, Nancy's mother decided that the teaching instruction at the school was all wrong (!) and that the teacher "had it in" for her child anyway. Nancy was transferred to a parochial school. By Thanksgiving time Nancy brought home her usual *F*'s in reading and spelling. "It's time to check her eyes," decided Nancy's progressive parents.

The structure of the eyes was normal and Nancy could pass the *Snellen Test* with ease. However, a visual problem was discovered, which had its origin in visual immaturity.

Visual Perception

Children do not perceive objects in the same manner as adults. They simply see things smaller, and often closer. In addition, the focusing system of the eye does not assume its adult shape and function until the age of five years, on the average. Nancy's visual development had lagged behind, and she was visually immature to cope with the task of reading in the first and second grade. Thus, Nancy had not acquired a basic sight vocabulary which she could apply to reading and spelling.

Nancy did not have adequate visual discrimination of form even at the age of eight years. The letters appeared so small that she could not differentiate between *o, e,* and *a*. She confused *h, n,* and *r*. She had trouble with closely similar letters, *f, t,* and *l,* and *b, d,* and *p*.

Corrective Measures

Plus lenses were prescribed for reading. The lenses relaxed the inefficient focusing system, magnified the letters, and seemed to move them away in space. The training program was begun on visual discrimination of form, and Nancy responded quickly. Words from the Dolch basic sight vocabulary were added as soon as Nancy could sound the necessary letters correctly. After a dozen sessions of training, Nancy began to make great strides in reading and spelling. By June of the following year, she proudly brought home her first *A* grades in those subjects.

There are pathetic, sometimes tragic,

overtones to most of these cases. Just before the holidays, Nancy's mother had asked the doctor to find out what Nancy wanted for Christmas, more than anything else. With tears in her eyes, Nancy said, "Just a *D* in reading and a *D* in spelling!"

Faulty Depth Perception

John, a sixteen-year-old junior in high school, was a big well-built boy, but he had trouble with all reading subjects. His eyes bothered him often. He blinked, scowled, and squinted his eyes. He helped to perpetuate the myth of 20/20 vision as the criterion of visual efficiency by passing the school *Snellen Test*.[2] John had two "eye" examinations, but no deficiency was noted.

John's acuity was actually substandard at intermediate and reading distances. His binocular depth perception (stereopsis), which had never been measured, was poorer than that of a fourth-grader. He was a threat, driving on the highway, since his distance judgment was faulty. Although he was right-dominant for hand and eye, he was trying to judge distances with his right eye, which had the poorer vision.

One fateful morning he came to school early to use the thirteen-inch table saw. As class began, he was alone at the saw. There was no distraction. He followed instructions, using a push-stick to push his little board through the saw.

He did not know that he was judging the back distance of the saw 2¼ inches closer than it actually was, nor that the saw appeared 5½ per cent smaller than it actually was! (Subsequent visual analysis brought this out, through size-constancy measurements.)

As the far ends of the small board began to vibrate behind the saw, John had to reach ahead with his left hand to hold them down. He neither held the thumb high enough nor reached ahead far enough—John lost two fingers of his left hand.

John only needed a simple lens correction to have avoided this accident. He is wearing glasses today.

The Sin of Omission

In all three cases, the sin of omission was failure to provide adequate visual correction at the working distance. Had these children been properly tested and corrected, this article would not have been written.

The co-operation of three groups is required to prevent similar tragedies in the future.

1. Parents must understand that their child's vision is their responsibility.
2. Schools must make it clear that the *Snellen Test* (if used at all) is no substitute for a complete visual analysis. Its limitations should be defined to parents so that they will not be lulled into a false sense of security.
3. The examining doctor must leave no visual function unchecked or taken for granted, for the child's future frequently is involved.

2. The reader is referred to C. H. Vetterli's "How Good Is 20/20 Vision?" *Education*, Vol. 80, No. 1 (September, 1959), pp. 41-45.

Leaders in Education XXIX

H. GORDON HULLFISH

In the long history of man there has probably never been a time when public education was under more penetrating scrutiny than at present. Far-reaching changes have been proposed, including new curricula, airborne television, and teaching machines. To appraise such proposals without reference to the values they are designed to serve is comparable to flying in the vast regions of outer space without a compass.

In making such an appraisal, Dr. H. Gordon Hullfish, of The Ohio State University faculty, would emhasize the importance of a philosophy.

For some thirty-five years this distinguished and genial scholar has been guiding both undergraduate and graduate students in an examination of their philosophical positions.

Perhaps one of Dr. Hullfish's students has captured the attitude of all of them in this statement: "His classes do not represent the presentation of a closed doctrine, a final answer to man's problems or way of life. Rather he insists, through the very force of his dedication to intelligence, that man must ever be free to question continually, to search for a better way of 'coming at life' so that philosopical inquiry becomes synonymous with growth of the individual spirit."

Dr. Hullfish's reputation as a teacher, educational consultant, and author is international. Indeed, there is scarcely any aspect of modern education where his creative influence has not been felt. It is probable, however, that Dr Hullfish's most powerful contribution to education is made in the classroom.

Great teachers are recognized for their ability to guide all students toward the achievement of their highest potentialities and to release the greatness which resides in each of them. Measured by this criterion, Dr. Hullfish is among the greatest. It is not surprising that he recently received from The Ohio State University a citation and Distinguished Teaching Award which recognizes his teaching genius.

Dr. Harold Fawcett
The Ohio State University

WHAT SCHOOLS ARE DOING

Foreign Language in the Elementary School

GUY WAGNER
Director of the Curriculum Laboratory
Iowa State Teachers College, Cedar Falls

ONE of the major educational developments during the past few years has been the impetus given to foreign-language instruction in the elementary-school curriculum. This wave of increased language instruction has mounted despite the reasonable hesitancy of administrators to add academic and financial weight to their school programs.

Relatively few curriculum guides have been developed for the teaching of foreign language in the elementary grades. Those that have been developed give evidence that these programs are in either French or Spanish.

Several significant observations can be made in connection with today's teaching of foreign languages in our elementary schools:

1. It seems reasonable to introduce a foreign language during the early years of school because of the "language plasticity" of children.

2. To be worth while, foreign-language learning should be continued until the pupil has acquired a working knowledge of the language.

3. Local problems should be evaluated in terms of the goals established for the course.

4. During the first few years of instruction, the aural-oral approach should be used almost entirely.

5. Experience chart reading probably should be the first type of reading. It should be followed by reading of printed materials which are fitted to the interests, maturity, and tempo of elementary-school children.

6. The tape recorder, the story-telling technique, various props (such as figurines and pictures), games, songs, and rhythms can be valuable teaching aids.

7. In the light of these new elementary language programs, the junior- and senior-high courses should be re-evaluated and reorganized.

Canal Zone Division of Schools, *Guide for the Teaching of Spanish to English-Speaking Students in the Canal Zone Elementary Schools,* Vol. I (Grades 1-3), 1956; Vol. II (Grades 4-5), 1958.

City of Chicago Board of Education. *Teaching Guide for French* (Grades K-6) *and Teaching Guide for Spanish* (Grades K-6), Chicago, Illinois, 1959.

Cleveland Public Schools. *French in the Elementary School,* Part I (Grades 1-6), Cleveland, Ohio, 1958.

Dade County Public Schools, *Let's Speak Spanish,* Bulletin No. 20B, Miami, Florida, 1958.

Los Angeles City Schools, *Instructional Guide for Spanish in the Elementary Schools,* Los Angeles, California, 1957.

Sister Mary Madeleine, "A Demonstration Unit for FLES," *The French Review* (May, 1958).

Thompson, E. E. *Foreign Language Teaching in Elementary Schools* (Washington, D. C.: Association for Supervision and Curriculum Development, NEA, 1958).

VIEWPOINTS

What Does the World Need? (Part III)

EARL H. HANSON
Superintendent of Schools, Rock Island, Illinois

WHAT this world needs is better-behaved people, but what is being done to satisfy this need? Pronouncements on moral and spiritual values in education are long and impressive. Thousands of schools and several state associations studied, reflected, pronounced, and, in most cases, acted on the great problem of improving human conduct during the decade of the 1950's.

I was on such a committee of the Illinois Education Association in the early part of the decade. Under the chairmanship of Edith Wentworth, president of the IEA, we catalogued moral and spiritual values, which were like those listed by the Educational Policies Commission. These values were (1) the supreme importance of individual personality; (2) respect and consideration for the rights and needs of others; (3) acceptance of responsibility for the consequences of one's own conduct; (4) respect for and pursuit of excellence; (5) search and respect for truth and justice; (6) mutual consent and co-operation based on truth and understanding; and (7) acceptance by each person of responsibility to elevate moral and spiritual values in the community.

Indeed, much has been done toward solving the problem, but still more is required—and not because schools have been abject failures. Observation reveals that the behavior of children in school is the best children's behavior anywhere —certainly better than in the movies, on the streets, in most homes, and, from what I have seen, in Sunday school. Behavior of children in school today is a lot better than it was twenty-five to sixty years ago. There are exceptions, particularly in disturbed parts of big cities; nevertheless, in the main, school controls and conduct are more orderly now than they were in the late 1800's.

I presume that one reason for the confusion in people's minds about the relative behavior of children in the "gay nineties" and now is this: What was a boyish prank then is juvenile delinquency now.

Probably the most serious charge is not that children behave badly in school, but that good school behavior does not always transfer into out-of-school life. If people are to be better behaved, there simply must be transfer. How may we accomplish this? Should the schools and churches become working partners? Should we develop these values through providing experiences and setting examples for the children?

I shall take up these questions and present my views in regard to them in subsequent issues of this magazine.

THE EDUCATIONAL FRONTIER

The Muscular Nature of Language

FRED G. WALCOTT
University of Michigan, Ann Arbor

THE Greeks planted at least one notion in the Western culture that has plagued education ever since. It was the concept of the duality of mind and body—the belief that the two are disparate, that the one merely houses the other, and that in relative importance the mind far transcends the gross physical form.

The impact of modern science has been to expose this error. The human organism has been revealed as an integrated unit, with all of its functions contained and controlled within the specialized tissues of the physical self. When thinking, the body exercises its natural functions of sensuous awareness, just as it exercises all its other organic functions, such as ingestion, respiration, elimination, etc. In all of these functions there is a conscious mental accompaniment that confirms the closely knit unity that the organism is.

The harm to education, which the primitive notion entailed, lay in the false emphases it imposed on methods of learning. The body was not to be cultivated, but subdued. Children had to learn to sit still, to be silent, and to think. Physical labor was not educative.

A prime example of this fallacy may be seen in our early methods of teaching language. One studied words at his desk—silently, as an exercise of memory. Most of the talking in the classroom was done by the teacher, while the children merely listened to the wisdom of the superior mind.

We now know that language is an active motor-kinesthetic function, that it is primarily a matter of muscular habit, acquired by long, patient practice in saying words aloud in sentences. The growing child undertakes this wondrous, self-impelled discipline of muscular drill as a function of his very being. One study estimates that four-year-old children utter from ten to twelve thousand words daily in their irrepressible drive to perfect this physical skill.

To change one's language, once it has been established in the subconscious muscular matrix of the personality, requires the learning of new muscular patterns. One must learn these patterns so thoroughly that they emerge subconsciously and automatically when the mind is focused on the ideas that the muscular symbols are simultaneously framing. The teaching of languages becomes, therefore, a matter of inducing muscular utterance. Obviously it must be oral, because only oral expression dominantly involves the muscles.

The chief problem in teaching language is that of multiplying opportunities to converse aloud—an activity not encouraged in traditional classrooms.

BOOK REVIEWS

WILLIAM P. SEARS, JR., Book Review Editor
New York University School of Education
Washington Square, New York City

HELPING YOUR GIFTED CHILD. By Ruth Strang. New York. Dutton. 1960. $4.50.

Ruth Strang discusses the gifted child in a realistic and extremely sensible way in this very rewarding book. The volume is one that parents will find especially helpful; it is one that school people can properly recommend to the parents of gifted youngsters. The book is a good one for appropriate use in teacher education. Dr. Strang, after first identifying characteristics of gifted children, discusses these youngsters by age groups. The book offers many suggestions for those who have gifted youngsters. It also contains numerous case studies and some reading lists for both children and parents.—W. P. S.

TEACHING SCIENCE THROUGH CONSERVATION. By Martha E. Munzer and Paul F. Brandwein. N. Y. McGraw-Hill. 1960. $7.50.

Practical laboratory experiences and field-study procedures are presented in this book which takes for its theme the story of conservation through the teaching of science. The experiments and field procedures have been used with much success by the authors in their schoolwork; they are vital and exciting experiences for youngsters. Natural resources are grouped into four categories: *Renewable resources* impinge on the fields of botany, biology, agronomy, biochemistry and genetics. *Non-renewable resources* are covered in geography, geology, minerology, chemistry, physics, and geophysics. *"Inexhaustible" resources* are those which presently seem limitless, and the areas involved include oceanography, meteorology, and the sciences of solar and atomic energy. *New and to-be-developed resources* are those which depend upon highly skilled people working in research centers. An annotated bibliography gives a thorough coverage of instructional materials that can be used in connection with the text and in school practice. Excellent for prospective teachers of science at all levels, as well as for seasoned teachers and supervisors in the field.—W. P. S.

MUSIC EDUCATION IN ACTION. Edited by Archie N. Jones. Boston. Allyn and Bacon. 1960. $6.16.

The problems of contemporary music education are carefully identified in this book, and they are discussed in practical terms. Basic principles are stressed, and the appropriate and tested methods to achieve the desired goals are pointed out. This is a comprehensive and useful text that can be recommended wholeheartedly to all music educators.—W. P. S.

MODERN ELEMENTARY CURRICULUM. William B. Ragan. New York. Holt. Revised Edition. 1960. $6.00.

This widely-adopted text first appeared in 1953; since that time, it has served effectively in many phases of teacher education. The book now has been revised, and two completely new chapters have been added. The first of these is entitled "School and Society in the Recent Past" and covers some of the changes of the last decade. The second new chapter, "The Outlook for the Future," makes predictions and points to impending changes. The volume is a comprehensive one with very broad coverage. The materials are carefully organized for teaching purposes. Each chapter provides problems and projects for student activity, as well as lists of selected readings and selected films.—W. P. S.

Coming in the December EDUCATION

Next month's EDUCATION will feature the subject of "Guidance and Counseling." The following are a few of the titles of articles which were gathered under the guest editorship of *Russell N. Cassel*, Director, Pupil Personnel Services, Lompoc Unified Schools, Lompoc, California:

Defining the Role of the Counselor, *Carroll H. Miller*, Specialist, Preparation of Personnel Workers, United States Office of Education, Washington, D. C.

Guidance Through Parent-Teacher Conferences, *W. Lloyd Johns*, Principal, Sequoia Junior High School, Fontana, California

Explorations in Creative Thinking in the Early School Years, *E. Paul Torrance*, Bureau of Educational Research, University of Minnesota, Minneapolis, Minnesota

The Role of the Counselor in Discipline, *Paul E. Opstad*, Counselor, Long Beach State College, Long Beach, California

Every Teacher a Counselor, But . . ., *David D. Malcolm*, Co-ordinator, Guidance Studies, San Diego State College, San Diego, California

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